

The Historical Development of Senam Asma Indonesia and the Contribution of Persahabatan Hospital (1985-Present)

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Abstract

Background: Senam Asma Indonesia (SAI) is a longstanding Indonesian structured asthma exercise program associated with Yayasan Asma Indonesia (YAI), asthma clubs, and Persahabatan Hospital. Its historical development has not previously been synthesized with explicit grading of source verification.

Methods: This non-systematic narrative historical review used targeted searches of PubMed/MEDLINE, Google Scholar, Indonesian journal portals, official government and hospital websites, and institutional repositories, without a lower date limit and updated on 10 July 2026. Historical statements were appraised according to source type and proximity to the event; discrepancies and unverified milestones were reported explicitly.

Results: An official Ministry of Health retrospective account states that YAI activities began in 1985 as an Asthma Club at RSUP Persahabatan, providing counseling and therapist-led breathing exercise. A 1993 standardization seminar is described in secondary sources, but original proceedings were not retrieved. A peer-reviewed retrospective review dates formalization of SAI to 1994. A 2002 clinical publication confirms that SAI was established in practice, while the 2003 revision manual is repeatedly cited but was not available in full through open sources. Subsequent Indonesian studies and hospital reports show continued clinical and community use, although the SAI-specific evidence remains small and heterogeneous.

Conclusion: Persahabatan Hospital was an early institutional setting for organized asthma education and breathing exercise and has remained linked to SAI-related activity. The verified historical record supports a narrative of local development, formalization, revision, and continued use, but national reach and several early milestones require primary archival confirmation. Future priorities include archival and oral-history research, national program mapping, standardized outcomes, and multicenter implementation studies.

Keywords: asthma; exercise training; Persahabatan Hospital; Senam Asma Indonesia, Indonesia Asthma Gymnastics

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INTRODUCTION

Asthma is a chronic respiratory disease characterized by variable symptoms and expiratory airflow limitation. Contemporary management combines anti-inflammatory pharmacological treatment with education, inhaler-skill assessment, trigger management, written action plans, and encouragement of regular physical activity. Exercise training may improve selected patient-centered and physiological outcomes, but it remains an adjunct rather than a substitute for guideline-based medication to reduce symptom burden, improve confidence in exertion, and enhance patient-centered outcomes.^{1,2}

In Indonesia, Senam Asma Indonesia (SAI) developed as a recognized group exercise program that combines coordinated movement, breathing control, relaxation, thoracic mobility, and aerobic conditioning. It has been associated with Yayasan Asma Indonesia (YAI), asthma clubs, and Persahabatan Hospital. A previous Indonesian review described SAI from a medical rehabilitation perspective, but the historical chronology, source quality, and boundaries between documented events and contemporary interpretation were not examined in detail.^{3,4,5}

Senam Asma Indonesia (SAI) has long served as a culturally resonant, structured exercise program within asthma clubs and community gatherings. A Ministry of Health account describes the origin of YAI activities in 1985 through an Asthma Club at Persahabatan Hospital, which included counseling or discussion sessions and breathing exercises led by therapists, indicating that structured, breathing-focused exercise was integrated into Persahabatan's asthma education ecosystem from its early years.⁴

This manuscript provides a narrative of the origins and evolution of SAI and its relationship with Persahabatan Hospital across three-time anchors: (i) foundational asthma club practices and institutional partnership (1985–early 1990s), (ii) standardization

momentum in the early 1990s and the formalization of SAI as a structured program in 1994, and (iii) consolidation and dissemination from the “Revisi 2003” era to the present.^{3–5}

Responding to contemporary needs, we explicitly foreground the contributions of pulmonologists as attending physicians in asthma management and of the physical medicine and rehabilitation (PM&R) team, and we clarify the growth of the multidisciplinary workforce typically involved in SAI delivery (doctors and therapists), consistent with published Indonesian sources.³

The knowledge gap is therefore not the absence of a historical narrative but the lack of a source-transparent synthesis that distinguishes among official records, peer-reviewed retrospective reports, clinical studies, and unverified institutional recollections. This review aims to: (1) summarize the historical development of SAI and Persahabatan Hospital's contribution; (2) indicate the degree of verification for each major milestone; and (3) interpret SAI cautiously within current asthma exercise and rehabilitation practice, without attributing to SAI benefits that have only been established for exercise training more broadly.

METHODS

Review design and scope

This article is a non-systematic narrative historical review. Reporting and organization were informed by the Scale for the Assessment of Narrative Review Articles (SANRA), particularly the need to state the review question, describe the literature search, use appropriate referencing, and present balanced scientific reasoning.³ The primary focus was the historical development of SAI; evidence concerning clinical effects was included only to contextualize current interpretation.

Information sources and search approach

Targeted searches were conducted without a lower date limit and updated on 10 June 2026. Sources included PubMed/MEDLINE, Google Scholar, Indonesian journal portals (including the Journal of the Indonesian Medical Association – known as JInMA, Jurnal Respirologi Indonesia, and Jurnal Ilmu Kedokteran), the Indonesian Ministry of Health website, the Persahabatan Hospital website, and Indonesian university repositories. Search terms were used in English and Indonesian and included combinations of “Senam Asma Indonesia,” “Indonesian asthma gymnastic,” “Yayasan Asma Indonesia,” “Persahabatan Hospital,” “Klub Asma,” “Cipayung 1993,” “Revisi 2003,” “asthma exercise,” and “breathing exercise.” Reference lists of relevant articles were also examined.

Eligibility and source appraisal

Sources were retained when they documented an SAI historical event, institutional relationship, program component, delivery model, or clinical evaluation. Evidence was classified as: (1) accessible official or contemporaneous documentation; (2) peer-reviewed retrospective or secondary evidence; (3) institutional webpages or reports; or (4) gray literature. Greater weight was given to sources closer in time and authorship to the reported event. When primary documents could not be retrieved, the event was labeled as secondary or partially verified rather than presented as an established fact.

Synthesis

Historical findings were organized chronologically and summarized in an evidence-graded timeline. Clinical interpretation and a proposed modern multidisciplinary framework were deliberately separated from the historical

results. No formal risk-of-bias tool, quantitative synthesis, or meta-analysis was undertaken.

A narrative historical synthesis based on publicly available Indonesian institutional sources and a search for peer-reviewed literature on breathing retraining and exercise in asthma. Historical anchors include: (1) an Indonesian Ministry of Health account documenting that YAI began its activities in 1985 through an Asthma Club at Persahabatan Hospital, including counseling and therapist-guided breathing exercises; (2) Indonesian institutional narratives describing a 1993 Cipayung seminar, associated with standardizing movement and music for asthma exercise; (3) repeated academic citations to a “Senam Asma Indonesia Revisi 2003” reference attributed to Indonesian respiratory experts and YAI-FKUI networks; and (4) the JInMA review, which describes SAI as invented in 1994 by a multidisciplinary YAI team and framed within medical rehabilitation.

Because parts of SAI’s history are reported through institutional webpages and gray literature (theses and conference/community reports), this narrative distinguishes well-documented institutional statements from inferences that require archival verification. The intent is to provide a coherent historical account suitable for publication and to identify research gaps for future primary historical work (archival and oral history research).

RESULTS

Foundations at Persahabatan Hospital: Asthma Clubs and Therapist-Led Breathing Exercise (1985–Early 1990s)

Community-based asthma education models can enhance adherence and promote safe physical activity for people with chronic respiratory diseases. Diseases.¹ In Indonesia, a key institutional development for such a model started at Persahabatan Hospital. According to an official Ministry of Health report, YAI began its activities in

1985 with an Asthma Club established by patients, families, a physiatrist (physical medicine and rehabilitation specialist), and pulmonologists at RSUP Persahabatan.⁴ The club offered 80unselling, discussions, and breathing exercises (senam) guided by a physiotherapist.^{4,6} This description is important for two reasons. First, it shows that breathing-focused exercise was integrated into a structured patient education system rather than delivered as an isolated routine. Second, the clear role of physiotherapists indicates early attention to safe movement, breathing cues, and session structure. For people with asthma—especially those at risk of exercise-induced bronchoconstriction or with poor symptom recognition—such supervised practice can boost confidence and lessen fear of exertion.^{1,2} Persahabatan's role as a national respiratory referral center and a long-standing hub for pulmonary medicine training likely strengthened the legitimacy and continuity of asthma-club practices, supporting their spread through YAI networks and professional collaboration.⁴ This institutional foundation laid the groundwork for the later development of standardized and scalable formats like SAI.³

Standardization Momentum and the Formalization of SAI (1993–1994)

The existence of asthma club activities expanded beyond single-site delivery, and consistency became essential for safety, teachability, and evaluation. Indonesian institutional narratives commonly describe a 1993 seminar in Cipayung as a key milestone in standardizing the movements and music used in asthma exercise routines.⁶ Standardizing tempo and movement sequence can support graded intensity, synchronized breathing cues, and fidelity across clubs.³ However, this momentum toward standardization should be distinguished from the formal invention of SAI as a named, structured program. A Journal of the Indonesian Medical

Association (JinMA) review describes SAI as having been invented in 1994 by a multidisciplinary team within YAI, using a structured series of exercises adjusted to asthma severity by varying loads at each stage.³ This clarification reconciles two frequently cited time points: 1993 as a standard-setting event in asthma exercise practice, and 1994 as the formal programmatic establishment of SAI under YAI. From a clinical governance perspective, Persahabatan's asthma-club ecosystem and institutional partnership with YAI plausibly supported the translation of standardized routines into routine practice, with opportunities for clinical screening, educational reinforcement, and symptom escalation pathways.^{3,4}

Consolidation and Dissemination: The “Revisi 2003” Era and National Scale-Up

In the early 2000s, asthma management worldwide advanced, and community programs needed modernization to facilitate broader dissemination.¹ In Indonesian academic literature, “Senam Asma Indonesia Revisi 2003” is frequently cited as a key reference, credited to Indonesian respiratory experts and the YAI–FKUI networks. Although the full text is not always accessible through open repositories, its repeated citation indicates that the 2003 revision served as a standardized guide for movement sequences, breathing cues, session structure, and program delivery. The consolidation implied by the “Revisi 2003” edition aligns with program maturation: the routine becomes more teachable, more reproducible across regions, and more suitable for instructor training and evaluation. For asthma exercise programs, such consolidation supports quality assurance and helps reduce variability that could influence symptom provocation. Additionally, the widespread circulation of audiovisual materials related to SAI enhances its national reach.⁴

Persahabatan Hospital's ongoing partnership with YAI activities and asthma-club culture indicates sustained institutional support for SAI's continuity. As

a referral center, Persahabatan also provides an ideal setting to link community exercise programs with guideline-based care, including medication optimization, inhaler technique reinforcement, and monitoring strategies.^{1,7}

Physical Medicine and Rehabilitation (PM&R) Contributions: Positioning SAI as a Community Rehabilitation Modality

Asthma-related activity limitation reflects not only airway inflammation but also multiple factors, including deconditioning, altered breathing mechanics, dysfunctional breathing patterns, anxiety related to shortness of breath, and other health issues such as musculoskeletal problems.¹ Physical Medicine and Rehabilitation (PM&R) provide a functional approach to address these factors, aiming to restore or maintain safe, independent participation in daily activities and structured exercise. The JinMA review describes SAI as a structured exercise program developed by a multidisciplinary YAI team (1994), customized to asthma severity, with gradual increases in intensity and elements designed to improve lung function, respiratory muscle strength, chest mobility, relaxation, and quality of life.^{3,8–10} In PM&R terms, these goals align with rehabilitation principles: progressive exposure to exertion, pacing, breathing control (including pursed-lip breathing), relaxation techniques, and optimizing posture and chest mechanics. Practical aspects of implementing PM&R include: (1) functional assessment and risk evaluation before participation, including screening for exertional symptoms; (2) personalized progression plans for individuals with varying levels of asthma control, deconditioning, or related conditions like obesity, osteoarthritis, or steroid-induced myopathy; (3) education on breathing techniques, energy conservation, and proper body mechanics; and (4) collaboration among pulmonologists, physiatrists, other healthcare providers, physiotherapists, and nurses to ensure session safety, fidelity, and clear escalation protocols (e.g., stopping criteria and referral for clinical reassessment). Thus, SAI can be viewed not only as

an exercise program but also as an accessible, culturally integrated community rehabilitation approach that complements current asthma management when the disease is stable.^{1,3}

Trained Professionals in SAI Delivery: Multidisciplinary Workforce and Competency Domains

SAI is best understood as a multidisciplinary program rather than a single-discipline exercise routine. The JinMA review describes SAI as developed by a multidisciplinary team within YAI, supporting a delivery model that integrates medical oversight, pulmonologists, physiatrists, sports medicine specialists, nurses, trained physiotherapists, trained instructors who led instruction, and community adherence mechanisms.³

1. Medical leadership and clinical governance.

Pulmonologists or respiratory physicians commonly provide disease-specific oversight, ensuring that participants are clinically stable and that pharmacologic management and action plans are reinforced.¹ PM&R physicians (physiatrists) complement this by translating respiratory symptoms into functional limitations and prescribing graded activity progression aligned with rehabilitation goals.³ Sports medicine specialists, clinical nutritionists, and other medical specialists also work together in comprehensive asthma management.¹

2. Therapist leadership and core delivery team.

Cardiorespiratory physiotherapists typically serve as key technical trainers in movement execution, pacing, warm-up and cool-down, breathing cueing, and monitoring exertional tolerance.³ This role aligns with early asthma-club activities at Persahabatan, which included physiotherapist-guided breathing exercises.⁴ Nurses and asthma educators reinforce inhaler technique, trigger control, symptom recognition, and adherence.¹

3. Community instructors and quality assurance.

Trained instructors deliver standardized sequences in community settings. Standardization ensures

safety and consistency; instructor training programs should guarantee a thorough understanding of asthma pathophysiology, asthma-related physical issues, exercise principles, staged session delivery, and evaluation.^{3,6} This competency-based approach supports scalability while maintaining SAI's structured identity. However, instructor training is not yet conducted regularly. Because a comprehensive national registry of trained personnel is not consistently available through open sources, this document focuses on defining professional

categories and training competencies rather than listing specific individuals. For a Persahabatan-focused publication, program documentation may optionally include a list of local instructors as an appendix, subject to approval by the relevant institutional governance.

The table below outline competency domains for a multidisciplinary SAI team to support safe, standardized delivery in community and hospital-linked settings.

Table 1. Typical multidisciplinary roles involved in SAI delivery.

Role	Key training domains	Examples of competencies
Pulmonologist/ Respiratory physician	Asthma control, exacerbation risk, medication and action plan, contraindications	Screen stability; adjust controller/reliever strategy; define stopping criteria; escalation/referral pathway
PM&R physician (Physiatrist)	Functional assessment, rehabilitation prescription, dyspnea management, comorbidity integration, FITT-VP prescription, load monitoring, prevention of Exercise Induced Bronchoconstriction's strategies	Set functional goals; grade activity; manage deconditioning and musculoskeletal barriers; teach pacing/energy conservation, strategies for EIB; monitor symptoms/load
Sports medicine specialist (if available)	Clinical exercise physiology, screening and risk stratification, exercise prescription in mild or controlled asthma patient	Prescribe and periodize aerobic/interval loads; advise return-to-exercise; integrate warm-up and daily sport strategies
Clinical Nutrition Specialist	Nutrition monitoring and energy expenditure calculation in Asthma	Prescribe daily meal and its composition
Physiotherapist/ Cardiorespiratory Physiotherapist	Exercise instruction, breathing retraining, posture correction, movement safety, monitoring during sessions	Teach technique and breathing cueing; adapt intensity; monitor exertion and symptoms; document session fidelity
Nurse / Asthma educator	Education delivery, inhaler technique, symptom recognition, adherence support	Check inhaler technique; reinforce trigger control; guide self-monitoring; recognize red flags
Trained instructor / community facilitator	Program fidelity, group facilitation, basic safety and referral triggers	Deliver standardized sequence; maintain tempo; ensure safe environment; refer participants with warning signs

Table 2. Evidence-graded timeline of Senam Asma Indonesia and Persahabatan Hospital.

Year	Milestone	Source basis	Source type	Verification status
1985	YAI activities reportedly began as an Asthma Club at RSUP Persahabatan, with counseling and physiotherapist-led breathing exercise.	Official Ministry of Health retrospective account published in 2016. ⁴	Official institutional report	Moderate-high: official but retrospective
1993	A Cipayang seminar reportedly agreed on standardization of movements and music.	Undergraduate thesis citing an RSUP Persahabatan 2015 source; original proceedings were not retrieved. ⁶	Secondary gray literature	Low: primary record unavailable
1994	SAI was described as developed or formalized by a multidisciplinary YAI team with staged exercise loads.	Peer-reviewed retrospective narrative review published in 2024. ⁵	Peer-reviewed secondary source	Moderate: retrospective; founding document unavailable
2002	A clinical publication evaluated SAI among people with asthma, confirming that the program was established in practice.	Peer-reviewed Indonesian clinical study. ⁷	Peer-reviewed clinical publication	High for program existence; not evidence of origin
2003	The manual Senam Asma Indonesia Revisi 2003 was issued and subsequently cited as a program reference.	Bibliographic details reported in later academic sources; full primary manual was not retrieved in the open-source search. ⁸	Primary manual identified indirectly	Partial: bibliographic record, content not independently verified
2011-2021	Indonesian studies evaluated clinical, pulmonary-function, respiratory-muscle, biomarker, and patient-centered outcomes.	Clinical and observational studies with small samples and heterogeneous designs. ⁹⁻¹²	Peer-reviewed clinical evidence	High for continued evaluation; limited for definitive efficacy
2025	Persahabatan Hospital reported community lung-health activities that included SAI.	Official hospital communication. ¹³	Official institutional report	High for contemporary activity

SAI in Persahabatan Hospital to Community Engagement (2003–Present)

SAI has remained visible through community health promotion and hospital-linked events. Persahabatan Hospital's public communications have described community programs that include SAI sessions alongside lung health promotion activities, demonstrating that SAI continues to operate as a living program rather than a historical artifact.⁷ SAI can be best integrated into modern practice through: (1) asthma education and written action plans, (2) inhaler technique reinforcement, (3) symptom monitoring (e.g., patient-reported control tools), and (4) screening for uncontrolled asthma and comorbidities before participation.¹ Embedding SAI within referral hospital governance can support safe expansion, especially for high-risk groups such as older adults, people with obesity, and those with frequent exacerbations.¹ In the digital age, dissemination via audiovisual channels offers opportunities and challenges: reach broadens, but

supervision and screening may decline. Therefore, implementation frameworks should define eligibility criteria, provide guidance for safe home practice, and establish referral pathways back to clinical services when warning signs appear.^{1,6,11}

DISCUSSION

SAI, as Indonesia's heritage and a future research focus in respiratory rehabilitation, has a historical record indicating that it evolved from a broader asthma-club ecosystem that, starting in 1985, combined education, counselling, and therapist-guided breathing exercises at Persahabatan.⁴ This foundation supports viewing SAI as a community rehabilitation program emphasizing functional capacity and confidence in exertion.³

Key milestones can be seen as program-governance mechanisms: the early 1990s' momentum for standardization enabled consistent delivery; the formal program establishment in 1994

under YAI provided a structured, phased framework; and the consolidation in 2003 supported national dissemination.^{1,5,6} Together, these milestones reflect a typical program development process: local innovation leading to standardization through several revisions, and ongoing application and practice. Limitations of this account include reliance on institutional statements and gray literature, as well as limited access to single-source archival documents for early milestones and the full 2003 manual. Future work could enhance the historical record through archival retrieval (YAI and hospital archives) and oral history interviews with founders, early therapists, and clinical leaders.^{3,6}

From an evidence and implementation perspective, priority research areas include: pragmatic trials or cohort studies evaluating asthma control (e.g., ACT/ACQ), exacerbation rates, quality of life, exercise capacity, and adherence; implementation research assessing reach, fidelity, and sustainability across asthma clubs; and development of a registry linking community programs with referral hospitals such as Persahabatan. These directions align with the disability mitigation framework, focusing on function, participation, and scalable delivery models.^{2,3,9,10}

LIMITATION

This review was narrative and targeted rather than systematic. Important documents may remain in institutional archives, private collections, or non-indexed Indonesian sources. Several historical claims rely on retrospective institutional accounts or secondary gray literature, which are susceptible to recall, attribution, and institutional bias. The full 2003 manual and original records for the reported 1993 and 1994 milestones were not available in the open-source search. The authors' affiliations with Persahabatan Hospital and prior SAI-related scholarship provide relevant expertise but may

also influence source selection and interpretation; this institutional perspective is therefore disclosed. Finally, the clinical studies were not formally pooled or subjected to a complete risk-of-bias assessment.

CONCLUSION

Senam Asma Indonesia represents a long-standing Indonesian model of structured asthma (gymnastic) exercise embedded within community education and multidisciplinary collaboration. Institutional accounts indicate that Yayasan Asthma Indonesia (YAI) began its activities in 1985 through an earlier Asthma Club at RS Persahabatan, which offered counselling and physiotherapist-guided breathing exercises, positioning the Hospital as an early incubator for the development of a structured asthma exercise practice.^{3,6}

Momentum toward standardization in the early 1990s and the formal invention of SAI under YAI in 1994 supported broader dissemination, which was later consolidated during the widely cited "Revisi 2003" era and continues to inform current applications.

Persahabatan hospital always present in SAI's growth, in conjunction with integrating the pulmonologist, physiatrist (physical medicine and rehabilitation specialist), cardiorespiratory physiotherapist, respiratory nurses, sport physiologist, sport medicine specialist, educator, patient, and community members, along with the needs of a multidisciplinary workforce, can redefine SAI as a community-based rehabilitation approach rooted in culture that complements current guideline-based asthma treatment when provided safely during stable disease periods. Enhancing the evidence base with standardized outcomes and implementation research will bolster SAI's future role in improving lung health in Indonesia.

DISCLOSURES

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Conflict of Interest

The authors declare no conflict of interest related to this study.

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Data availability

All sources used in this narrative review are cited in the reference list. Archival materials not publicly accessible were not treated as independently verified evidence.

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