Interdisciplinary Collaboration Between Social Workers and Healthcare Providers in Chronic Disease Management: Review

[1]-Nouf Khaled Alruwaily,[2]-Yasmin Dafer Alshehri,[3]-Saoud Nasser Al Dosari,[4]-Kholoud Obaid Alamri,[5]-Mutlaq Mater Alosaimi,[6]-Mohammed Abdullah Alyousef,[7]-Sarah Mohammed Alzeer,[8]-Faisal Saad Alsaaid,[9]- MAJED NASSER BIN FAHAYD,[10]-Salman Mohammad Saud Alsumair,[11]- Omar Mohammed Altariqi,[12]-Saud Nasser Fahad Alshammari

1. +KSA, Ministry Of Health, Alyamamah Hospital
2. KSA, Ministry Of Health, Al-Yamamah Hospital
3. KSA, Ministry Of Health, Al -Sulayyil   General   Hospital
4. KSA, Ministry Of Health, Al-Yamamah Hospital
5. KSA, Ministry Of Health, Almuzahimiyah Hospital
6. KSA, Ministry Of Health
7. KSA, Ministry Of Health, Al-Yamamah Hospital
8. KSA, Ministry Of Health, Al-Omran Primary Health Care
9. KSA, Ministry Of Health, Almuzahimiyah Hospital
10. KSA, Ministry Of Health, Eradah Compleex For Health - Hail
11. KSA, Ministry Of Health
12. KSA, Ministry Of Health, Hail Health Cluster

Abstract

Background: Chronic diseases significantly impact global health, contributing to substantial morbidity and mortality. Effective management of these conditions requires collaboration among healthcare providers, patients, and families. The role of digital health interventions, particularly conversational agents, in enhancing disease management is increasingly recognized, especially in pediatric populations.

Methods: This study focused on asthma management in children, utilizing the MAX conversational agent to facilitate communication between healthcare professionals, patients, and family members. A feasibility study was conducted involving a small sample of pediatric patients and their caregivers, assessing the intervention's efficacy in improving asthma knowledge, medication adherence, and inhalation techniques.

Results: The MAX intervention demonstrated a therapeutic goal attainment rate of 75.5%, with significant improvements in asthma knowledge and reductions in inhalation errors. Feedback from healthcare professionals was pivotal in enhancing patients' inhalation techniques, while the conversational agent effectively engaged family members, encouraging their involvement in the management process.

Conclusion: The findings indicate that conversational agents can serve as effective mediators in chronic disease management, particularly in asthma care for children. By integrating digital health tools within healthcare systems, we can enhance patient education, adherence to treatment protocols, and overall health outcomes. Future research should explore the scalability of such interventions and their impact on healthcare costs and patient quality of life.

Keywords: Chronic Disease Management, Asthma, Digital Health Interventions, Conversational Agents, Pediatric Health

Introduction

Chronic conditions pose a considerable threat to the global population, leading to significant financial and health-related burdens, which diminish the quality of life for those impacted [1]. In 2016, chronic diseases impacted over fifty percent of the United States population, constituting a primary cause of mortality, with their prevalence anticipated to increase further. Alongside continuous therapy and medical supervision, illness management is essential for alleviating chronic conditions by striving to reduce symptoms, functional impairments, and associated aggravating risks [2]. Effective illness treatment often requires a reliable partnership among healthcare providers, patients, and their families [3]. Furthermore, patients necessitate specialized cognitive and behavioral competencies to manage their condition [4,5]. This is particularly significant for children affected by their illness as they confront their future.

Digital health interventions are emerging tools for the management of chronic diseases, as they can educate and engage patients through a direct channel that supports communication with physicians and healthcare professionals and enables the scale-up of personalized and behavioral interventions at low cost [1,6-9]. Digital health interventions offer medical care outside the clinical setting to provide ongoing support and communication in everyday monitoring and management [1]. Recent studies have demonstrated the advantages of digital interventions for patients, especially in children and adolescents [10-14]. Moreover, conversational agents (i.e., computer programs that simulate human interaction) have shown encouraging outcomes for patient satisfaction, therapeutic alliance, and treatment efficacy [15-18]. Digital health treatments, namely mobile applications, may be especially efficacious for children as they provide an engaging medium for instruction and management via the potential incorporation of multimedia elements such as audio or video [19]. Conversational agents, within these interventions, serve as mediating social actors; they assume a substantial portion of the intervention delivery in a scalable fashion and facilitate communication among healthcare professionals, family members, and patients when necessary.

This research focused on asthma as a prototypical chronic ailment. Affecting around 235 million individuals, asthma ranks among the most prevalent chronic diseases globally. Asthma is defined by reversible airway obstruction. The symptoms include wheezing, dyspnea, and coughing [22]. Asthma is associated with high financial and health costs, with total annual asthma costs in the United States estimated at US $56 billion in 2011 [23]. The average annual cost of asthma treatment per patient varies by nation, ranging from US $1900 in Europe to US $3100 in the United States [23]. Even though a lack of medical treatment leads to a significantly reduced quality of life, the management of asthma still presents a daunting challenge because the exact cause is not well known, and its appearance varies significantly between individuals [24].

Asthma treatment

Effective asthma treatment requires certain cognitive competencies, including awareness of asthma triggers and the need to adhere to medicine inhalation protocols, with behavioral skills such as the execution of proper inhalation methods. Further, asthma education and health literacy are fundamental to self-management since a better understanding of the condition would help patients avoid the negative effects of poor asthma control [25-27]. Inadequate health literacy has been associated with negative health outcomes, such as increased hospitalization rates and prolonged stays, even when accounting for disease severity and socioeconomic factors [28,29].

However, young patients still experience issues linked to both cognitive and behavioral abilities that impair their ability to appropriately give asthma treatments [30-35]. For instance, understanding asthma and critical aspects of asthma management, such as the significance of drug adherence, may evolve, necessitating that patients consistently refresh their knowledge base [36-40]. A prevalent issue is an inadequate technique during medication inhalation, resulting in diminished drug dispersion in the lungs, which subsequently compromises asthma stability and reduces the clinical efficacy of the administered medication [41-44].

A multitude of mobile applications has been created for asthma treatment, specifically emphasizing the monitoring of symptoms and drugs [45]. Asthma applications designed for children frequently incorporate gamification elements to enhance engagement and educate them on asthma monitoring and management, including medication adherence [46,47]. However, in addition to shortcomings of asthma management related to cognitive and behavioral skills, children often face problems with such technological solutions when they are not integrated into existing healthcare systems and do not allow for explicit support by healthcare professionals or family members. In the absence of a designated party or mediator, integrating all pertinent stakeholders—such as healthcare professionals, family members, and patients—into the disease management process frequently poses a challenge.

Additionally, due to absent or insufficient motivation strategies such as interactivity, proper incentives and rewards, and experiential value, the effects of the previously reported digital interventions in asthma, such as the health condition of young patients, are prone to be negatively affected by the temporal decline in the patients' engagement and motivation [10,48-54]. A patient's motivation to adhere to digital interventions and therapeutic tasks may be adversely affected by factors including family routines, child-rearing challenges, social issues, and the levels of trust, communication, and empathy with healthcare professionals. Furthermore, evidence indicates that shared decision-making and collaboration among patients, parents, and healthcare professionals are critical success factors in effective asthma self-management programs, resulting in enhanced adherence and health outcomes [55].

The intervention included personalized feedback on the inhalation technique from the healthcare professional, an asthma quiz facilitated by the conversational agent, educational video clips provided by the conversational agent (only during the initial session), and the media library, which facilitated reflective observation [56].

In comparison to analogous research on conversational agents addressing childhood obesity, physical inactivity, or chronic pain management, this intervention yielded a substantial overall therapeutic goal attainment rate (75.5%) and enhanced asthma knowledge test scores and behavioral skills, as evidenced by the absence of inhalation errors following feedback from healthcare professionals [17]. Furthermore, the MAX conversational agent successfully encouraged family members to assist the young patients in 97.8% of instances when requested. The MAX intervention is scalable, as shown by the fact that 99.5% of the conversational exchanges involve patients and the MAX conversational agent, indicating significant human effort and reaction from healthcare personnel. Following the app onboarding process, which averages 15 minutes, healthcare professionals engaged in, on average, a single conversational turn with patients through the manual chat channel of the MAX app while delivering personalized feedback on the inhalation technique. Furthermore, they required under 4 minutes to evaluate the inhalation technique and 3 days to provide feedback to the patients. This intervention required an average of 20 minutes of human effort per patient, 10 automated SMS messages, comprising three reminders, and supplementary expenses for gift vouchers, including lottery prizes. We lowered the potential for smartphone addiction by restricting the number of available sessions to one per day and further incorporating physical workouts outside the digital world of the app to improve social contact and counterbalance increased smartphone use among youngsters [57].

The qualitative response indicated several appreciated and significant characteristics, along with obstacles and prospective enhancements of the intervention. Integrating the outcomes from each question of the quantitative analysis, and taking into account the significance and frequency noted, certain elements need discussion and potential improvement in future iterations. Initially, technological concerns must be minimized, since the efficacy and reach of the intervention rely on seamless functioning. This necessitates, informed by the insights gained from the MAX intervention, a more comprehensive knowledge and study of the technological infrastructure inside healthcare professionals' institutions (e.g., user-friendly patient access to broadband internet via Wi-Fi in hospitals). Even though the text-based conversational agent was perceived as positive and engaging, participants indicated that the conversational agent had too many predefined answer options. It was previously proposed that conversational agents may be impactful and captivating for young patients, and that open-text responses are much valued [58]. Previous research [59]

highlighted privacy concerns associated with conversational agents and open-text responses, since these agents may inadvertently access an increasing amount of personal information.

Constraints and Prospective Research

This research was conducted as a feasibility study with a restricted number of participants. It so establishes the foundation, rather than the conclusive answer, for the next endeavors in the domain. The tiny sample indicates that the findings are unrepresentative and should be viewed cautiously. Further, only healthcare professionals from four hospitals (eg, pediatric neurologists) and two cantonal patient groups of the Swiss Lung Association participated in this research. Consequently, it remains uncertain to what extent the MAX intervention would yield similar results with other pertinent healthcare professionals, such as general practitioners. Nonspecialized healthcare professionals may want much more time to evaluate the inhaling video clips or may lack the requisite skills without further instructional interventions. A further limitation of this study concerns the inductive open coding of the interviews conducted solely by one author (SH), leading to potential bias in the qualitative findings. Furthermore, given the social support evaluation was self-reported by the young patients and associated with bonus points for the MAX intervention (to enhance the likelihood of winning), it may be inferred that the supportive participation of family members was likely overstated. Moreover, the web-based MAX interface for healthcare providers, together with the patient data, was not included in hospital information systems or the information system of the patient organization. Particularly, some data needed to be redundantly recorded (e.g., contact number, patient name) in the MAX system, which probably led to an overestimation of efforts (e.g., the time of the onboarding process). Ultimately, we have just documented the expenses and efforts associated with the MAX intervention, therefore precluding any discussion on cost-effectiveness implications. It is also crucial that future studies explore the expenses of asthma management (eg, the frequency and costs of hospitalizations due to asthma exacerbations) and to the degree which they may be decreased with the MAX intervention.

Digital health treatments for asthma

Digital health treatments for asthma include several mobile health applications that provide patients with information and assist in monitoring symptoms or medicines, often including a gamification element [45-47]. A comprehensive analysis of 15 distinct digital treatments for pediatric asthma management revealed that 87% enhanced medication and behavioral adherence, while 53% exhibited better health outcomes [60]. Despite the diverse functionalities of these mobile health applications, such as automated personalized messages, interactive websites, and online modules for asthma education, they lack scalable text-based healthcare conversational agents to facilitate communication with healthcare professionals. Prior research in other health sectors has shown encouraging findings from the use of conversational agents to enhance results, including the promotion of physical exercise for pediatric obesity [61]. The MAX intervention, by using a scalable conversational agent tailored for asthma, may enhance interactions with healthcare professionals while lowering costs, addressing a significant problem in previous asthma therapies [62]. MAX offers a distinctive advantage with its three-component strategy, which incorporates healthcare experts, the digital assistant MAX, and family members to aid young patients in enhancing their asthma knowledge and behavioral skills.

Conclusions

We have shown that conversational agents designed as digital assistants for healthcare practitioners may enhance cognitive and behavioral abilities in chronic illness management, as exemplified by asthma in children. We have shown that conversational agents may assume the role of a mediating social actor in a complex healthcare environment with many stakeholders, effectively providing a scalable digital health intervention integrated into the daily lives of patients and their families. This study aligns with the innovative JITAI approach, offering additional insights into the utilization of conversational agents that may, in the future, detect states of vulnerability and receptivity, thereby directing pertinent information to suitable individuals, including the patient, a romantic partner, family member, nurse, or physician. We foresee a future where scalable conversational agents function as a grand maestro, dynamically directing

an orchestra through the symphony of life, adapting to the contributions of many members, and enhancing their performance with each iteration.

References

1. Kvedar JC, Fogel AL, Elenko E, Zohar D. Digital medicine's march on chronic disease. Nat Biotechnol 2016 Mar;34(3):239-246.

2. Frey U, Suki B. Complexity of chronic asthma and chronic obstructive pulmonary disease: implications for risk assessment, and disease progression and control. Lancet 2008 Sep 20;372(9643):1088-1099

3. Dimatteo MR. The role of effective communication with children and their families in fostering adherence to pediatric regimens. Patient Educ Couns 2004 Dec;55(3):339-344.

4. Mackey LM, Doody C, Werner EL, Fullen B. Self-management skills in chronic disease management: what role does health literacy have? Med Decis Making 2016 Aug;36(6):741-759.

5. Hill-Briggs F. Problem solving in diabetes self-management: a model of chronic illness self-management behavior. Ann Behav Med 2003;25(3):182-193.

6. Barlow JH, Ellard DR. Psycho-educational interventions for children with chronic disease, parents and siblings: an overview of the research evidence base. Child Care Health Dev 2004 Nov;30(6):637-645.

7. Voruganti T, Grunfeld E, Makuwaza T, Bender JL. Web-based tools for text-based patient-provider communication in chronic conditions: a scoping review. J Med Internet Res 2017 Oct 27;19(10):e366

8. Alpert JM, Dyer KE, Lafata JE. Patient-centered communication in digital medical encounters. Patient Educ Couns 2017 Oct;100(10):1852-1858

9. Brigden A, Anderson E, Linney C, Morris R, Parslow R, Serafimova T, et al. Digital behavior change interventions for younger children with chronic health conditions: systematic review. J Med Internet Res 2020 Jul 31;22(7):e16924

10. Stukus DR, Farooqui N, Strothman K, Ryan K, Zhao S, Stevens JH, et al. Real-world evaluation of a mobile health application in children with asthma. Ann Allergy Asthma Immunol 2018 Apr;120(4):395-400.

11. Mosnaim G, Li H, Martin M, Richardson D, Belice PJ, Avery E, et al. A tailored mobile health intervention to improve adherence and asthma control in minority adolescents. J Allergy Clin Immunol Pract 2015;3(2):288-290

12. Morton RW, Elphick HE, Rigby AS, Daw WJ, King DA, Smith LJ, et al. STAAR: a randomized controlled trial of electronic adherence monitoring with reminder alarms and feedback to improve clinical outcomes for children with asthma. Thorax 2017 Apr;72(4):347-354.

13. Kenyon CC, Chang J, Wynter S, Fowler JC, Long J, Bryant-Stephens TC. Electronic adherence monitoring in a high-utilizing pediatric asthma cohort: a feasibility study. JMIR Res Protoc 2016 Jun 22;5(2):e132

14. Chan AHY, Stewart AW, Harrison J, Camargo CA, Black PN, Mitchell EA. The effect of an electronic monitoring device with audiovisual reminder function on adherence to inhaled corticosteroids and school attendance in children with asthma: a randomised controlled trial. Lancet Respir Med 2015 Mar;3(3):210-219.

15. Bickmore TW, Mitchell SE, Jack BW, Paasche-Orlow MK, Pfeifer LM, Odonnell J. Response to a relational agent by hospital patients with depressive symptoms. Interact Comput 2010 Jul 01;22(4):289-298

16. Bickmore TW, Picard RW. Establishing and maintaining long-term human-computer relationships. ACM Trans Comput Hum Interact 2005 Jun;12(2):293-327.

17. Hauser-Ulrich S, Künzli H, Meier-Peterhans D, Kowatsch T. A smartphone-based health care chatbot to promote self-management of chronic pain (SELMA): pilot randomized controlled trial. JMIR Mhealth Uhealth 2020 Apr 03;8(4):e15806

18. Ma T, Sharifi H, Chattopadhyay D. Virtual humans in health-related interventions: a meta-analysis. 2019 Presented at: Extended Abstracts of the CHI Conference on Human Factors in Computing Systems; 2019; Glasgow p. 1-6.

19. Bickmore TW, Paasche-Orlow MK. The role of information technology in health literacy research. J Health Commun 2012;17(Suppl 3):23-29.

20. Asthma Fact Sheet. World Health Organization. URL: https://www.who.int/en/news-room/fact-sheets/detail/asthma [accessed 2020-04-13]

21. Patadia MO, Murrill LL, Corey J. Asthma: symptoms and presentation. Otolaryngol Clin North Am 2014 Feb;47(1):23-32.

22. Barrios RJ, Kheradmand F, Batts L, Corry DB. Asthma: pathology and pathophysiology. Arch Pathol Lab Med 2006 Apr;130(4):447-451

23. Nunes C, Pereira AM, Morais-Almeida M. Asthma costs and social impact. Asthma Res Pract 2017;3:1-11

24. Eder W, Ege MJ, von Mutius E. The asthma epidemic. N Engl J Med 2006 Nov 23;355(21):2226-2235.

25. Haughney J, Price D, Kaplan A, Chrystyn H, Horne R, May N, et al. Achieving asthma control in practice: understanding the reasons for poor control. Respir Med 2008 Dec;102(12):1681-1693

26. Dewalt DA, Berkman ND, Sheridan S, Lohr KN, Pignone MP. Literacy and health outcomes: a systematic review of the literature. J Gen Intern Med 2004 Dec;19(12):1228-1239

27. Wang K, Chu N, Lin S, Chiang I, Perng W, Lai H. Examining the causal model linking health literacy to health outcomes of asthma patients. J Clin Nurs 2014 Jul;23(13-14):2031-2042.

28. Lindquist LA, Go L, Fleisher J, Jain N, Friesema E, Baker DW. Relationship of health literacy to intentional and unintentional non-adherence of hospital discharge medications. J Gen Intern Med 2012 Feb;27(2):173-178

29. Jaffee EG, Arora VM, Matthiesen MI, Meltzer DO, Press VG. Health literacy and hospital length of stay: an inpatient cohort study. J Hosp Med 2017 Dec;12(12):969-973.

30. Miles C, Arden-Close E, Thomas M, Bruton A, Yardley L, Hankins M, et al. Barriers and facilitators of effective self-management in asthma: systematic review and thematic synthesis of patient and healthcare professional views. NPJ Prim Care Respir Med 2017 Oct 09;27(1):57.

31. Chang C. Asthma in children and adolescents: a comprehensive approach to diagnosis and management. Clin Rev Allergy Immunol 2012 Aug;43(1-2):98-137

32. Walia M, Paul L, Satyavani A, Lodha R, Kalaivani M, Kabra SK. Assessment of inhalation technique and determinants of incorrect performance among children with asthma. Pediatr Pulmonol 2006 Nov;41(11):1082-1087.

33. Wade SL, Holden G, Lynn H, Mitchell H, Ewart C. Cognitive-behavioral predictors of asthma morbidity in inner-city children. J Dev Behav Pediatr 2000 Oct;21(5):340-346.

34. Vaidyam AN, Wisniewski H, Halamka JD, Kashavan MS, Torous JB. Chatbots and conversational agents in mental health: a review of the psychiatric landscape. Can J Psychiatry 2019 Jul;64(7):456-464

35. Blake KV. Improving adherence to asthma medications: current knowledge and future perspectives. Curr Opin Pulm Med 2017 Jan;23(1):62-70.

36. Searle A, Jago R, Henderson J, Turner KM. Children's, parents' and health professionals' views on the management of childhood asthma: a qualitative study. NPJ Prim Care Respir Med 2017 Sep 11;27(1):53.

37. Kuprys-Lipinska I, Kolacinska-Flont M, Kuna P. New approach to intermittent and mild asthma therapy: evolution or revolution in the GINA guidelines? Clin Transl Allergy 2020;10:19

38. Potter PC. Current guidelines for the management of asthma in young children. Allergy Asthma Immunol Res 2010 Jan;2(1):1-13

39. Brand PLP. Key issues in inhalation therapy in children. Curr Med Res Opin 2005;21(Suppl 4):S27-S32.

40. de Benedictis D, Bush A. Asthma in adolescence: Is there any news? Pediatr Pulmonol 2017 Jan;52(1):129-138.

41. Melani AS, Bonavia M, Cilenti V, Cinti C, Lodi M, Martucci P, Gruppo Educazionale Associazione Italiana Pneumologi Ospedalieri. Inhaler mishandling remains common in real life and is associated with reduced disease control. Respir Med 2011 Jun;105(6):930-938

42. Giraud V, Roche N. Misuse of corticosteroid metered-dose inhaler is associated with decreased asthma stability. Eur Respir J 2002 Feb;19(2):246-251

43. Lavorini F, Magnan A, Dubus JC, Voshaar T, Corbetta L, Broeders M, et al. Effect of incorrect use of dry powder inhalers on management of patients with asthma and COPD. Respir Med 2008 Apr;102(4):593-604

44. Harris K, Mosler G, Grigg J. Theory-based self-management intervention to improve adolescents' asthma control: a cluster randomised controlled trial protocol. BMJ Open 2019 Apr 23;9(4):e025867

45. Huckvale K, Morrison C, Ouyang J, Ghaghda A, Car J. The evolution of mobile apps for asthma: an updated systematic assessment of content and tools. BMC Med 2015 Mar 23;13:58

46. Grossman B, Conner S, Mosnaim G, Albers J, Leigh J, Jones S, et al. Application of human augmentics: a persuasive asthma inhaler. J Biomed Inform 2017 Mar;67:51-58

47. Tinschert P, Jakob R, Barata F, Kramer J, Kowatsch T. The potential of mobile apps for improving asthma self-management: a review of publicly available and well-adopted asthma apps. JMIR Mhealth Uhealth 2017 Aug 02;5(8):e113

48. King P, Tester J. The landscape of persuasive technologies. Commun ACM 1999 May;42(5):31-38.

49. Venkatesh V, Thong JYL, Xu X. Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. MIS Quart 2012;36(1):157-178.

50. van der Heijden H. User acceptance of hedonic information systems. MIS Quart 2004;28(4):695-704.

51. Liu D, Santhanam R, Webster J. Toward meaningful engagement: a framework for design and research of gamified information systems. MIS Quart 2017 Apr 4;41(4):1011-1034.

52. Sanders C, Rogers A, Bowen R, Bower P, Hirani S, Cartwright M, et al. Exploring barriers to participation and adoption of telehealth and telecare within the Whole System Demonstrator trial: a qualitative study. BMC Health Serv Res 2012 Jul 26;12:220

53. Sánchez-Morillo D, Crespo M, León A, Crespo Foix LF. A novel multimodal tool for telemonitoring patients with COPD. Inform Health Soc Care 2015 Jan;40(1):1-22.

54. Sanchez-Morillo D, Fernandez-Granero MA, Leon-Jimenez A. Use of predictive algorithms in-home monitoring of chronic obstructive pulmonary disease and asthma: A systematic review. Chron Respir Dis 2016 Aug;13(3):264-283

55. Klok T, Kaptein AA, Brand PLP. Non-adherence in children with asthma reviewed: The need for improvement of asthma care and medical education. Pediatr Allergy Immunol 2015 May;26(3):197-205.

56. Kolb DA. Experience as the source of learning and development. Upper Sadle River: Prentice Hall; 1984.

57. Nahum-Shani I, Smith SN, Spring BJ, Collins LM, Witkiewitz K, Tewari A, et al. Just-in-time adaptive interventions (JITAIs) in mobile health: key components and design principles for ongoing health behavior support. Ann Behav Med 2018 May 18;52(6):446-462

58. Künzler F, Mishra V, Kramer J, Kotz D, Fleisch E, Kowatsch T. Exploring the State-of-Receptivity for mHealth Interventions. Proc ACM Interactive, Mobile, Wearable and Ubiquitous Technologies 2019;3(4):1-27.

59. Heilbron FC, Escorcia V, Ghanem B, Niebles JC. ActivityNet: A large-scale video benchmark for human activity understanding. 2015 Presented at: 2015 IEEE Conference on Computer Vision and Pattern Recognition; June 7-12, 2015; Boston, MA p. 961-970.

60. Ramsey RR, Plevinsky JM, Kollin SR, Gibler RC, Guilbert TW, Hommel KA. Systematic review of digital interventions for pediatric asthma management. J Allergy Clin Immunol Pract 2020 Apr;8(4):1284-1293.

61. Kramer J, Künzler F, Mishra V, Presset B, Kotz D, Smith S, et al. Investigating intervention components and exploring states of receptivity for a smartphone app to promote physical activity: protocol of a microrandomized trial. JMIR Res Protoc 2019 Jan 31;8(1):e11540

62. Bickmore T, Gruber A, Picard R. Establishing the computer-patient working alliance in automated health behavior change interventions. Patient Educ Couns 2005 Oct;59(1):21-30.

التعاون متعدد التخصصات بين الأخصائيين الاجتماعيين ومقدمي الرعاية الصحية في إدارة الأمراض المزمنة: مراجعة

الملخص

الخلفية: تؤثر الأمراض المزمنة بشكل كبير على الصحة العالمية، مما يؤدي إلى زيادة معدلات الاعتلال والوفيات. تتطلب الإدارة الفعالة لهذه الحالات تعاونًا وثيقًا بين مقدمي الرعاية الصحية، المرضى، وأسرهم. يتزايد الاعتراف بدور التدخلات الصحية الرقمية، وخاصة الوكلاء الافتراضيين (المساعدات الحوارية)، في تعزيز إدارة الأمراض، خاصة في فئة الأطفال.

الطرق: لتسهيل التواصل بين المهنيين MAX ركزت هذه الدراسة على إدارة مرض الربو لدى الأطفال من خلال استخدام الوكيل الافتراضي الصحيين، المرضى، وأفراد أسرهم. أُجريت دراسة جدوى على عينة صغيرة من المرضى الأطفال ومقدمي الرعاية لهم لتقييم فعالية التدخل في تحسين معرفة الربو، الالتزام بالأدوية، وتقنيات الاستنشاق.

النتائج: حقق تدخل MAX بلغ معدل تحقيق للأهداف العلاجية 75.5% مع استخدام أخطاء في انخفاض والربو بالأطفال معرفة في كبير تحسن مع ، أجهزة الاستنشاق. كان لتغذية مقدمي الرعاية الصحية دور محوري في تحسين تقنيات الاستنشاق لدى المرضى، بينما أظهر الوكيل الافتراضي فعالية في إشراك أفراد الأسرة، مما شجعهم على المشاركة في إدارة المرض.

الخلاصة: تشير النتائج إلى أن الوكلاء الافتراضيين يمكن أن يكونوا أدوات فعالة في إدارة الأمراض المزمنة، خاصة في رعاية مرضى الربو من الأطفال. من خلال دمج الأدوات الصحية الرقمية ضمن أنظمة الرعاية الصحية، يمكن تحسين تعليم المرضى، الالتزام ببروتوكولات العلاج، والنتائج الصحية العامة. ينبغي أن تستكشف الأبحاث المستقبلية إمكانية توسيع نطاق هذه التدخلات وتأثيرها على تكاليف الرعاية الصحية وجودة حياة المرضى.

الكلمات المفتاحية: إدارة الأمراض المزمنة، الربو، التدخلات الصحية الرقمية، الوكلاء الافتراضيون، صحة الأطفال.