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Medication adherence support applications for chronic arthritis patients: healthcare providers' perspective in Saudi Arabia

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Agenda



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Methodology



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Discussion

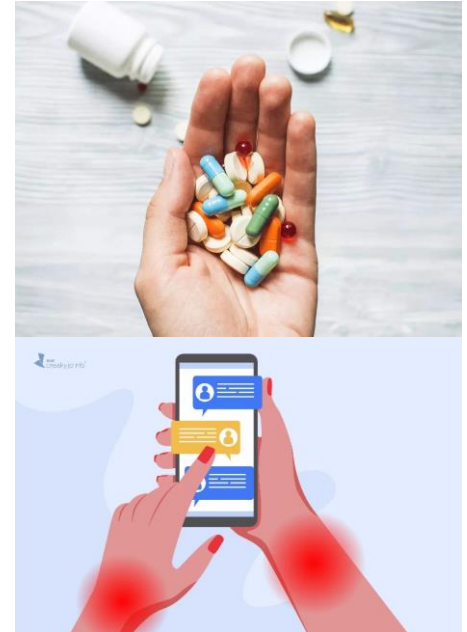


Conclusion



Introduction

- Chronic arthritis is due to chronic inflammation in one or different joints in the human body caused by genetic or environmental factors [1].
- Apps that support patient self-management enable users to set reminders, track symptoms, and connect with health professionals [6].
- Stakeholders' involvement in designing mobile health applications is essential, and this should be considered from the early stages [11].
- The involvement of HCPs in designing and developing medication adherence applications is scarce [10].





Method

- The qualitative research design was adopted and ten individual interviews were conducted with HCPs: Rheumatologists (2), Health education specialists (2), Pharmacists (2), Health informaticians (2), and Representatives from the Saudi Arthritis Society (2).
- To explore:
 - Medication adherence barriers
 - Current interventions employed to support medication adherence,
 - Experiences in providing medication adherence support
 - Perceptions regarding mobile apps that support medication adherence for chronic arthritis patients.
- The Health and Medical Human Research Ethics Committee at the University of Wollongong and the MOH in the Kingdom of Saudi Arabia approved the study (Ethics number: 2021/314).



Results

- Four themes emerged from the thematic analysis; these included
 - Informational content
 - Utilitarian
 - Motivational
 - Socialisation features



The informational content

Subthemes	Initial codes	Quotes
Patient awareness	Medications	<i>"...the medication side effects and the medication benefits on their health, ... to motivate them to be adherent." [P10]</i>
	Healthy lifestyle	<i>"Once they have ideal weight ... some foods lead to rheumatic diseases such as gout Physical exercise is important..."[P5]</i>
	Support programs	<i>"...different medication support programs offered by charity and governmental health institutions."[P6]</i>
Presentation of content	Languages	<i>"...educational content in different languages to help different patients ..."[P5]</i>
	Different formats	<i>"...visual person learns by seeing things, and others read the information to make sure, ... or hear information through audio broadcasts..."[P9]</i>
	Clarity	<i>"clarity of content, "we don't use medical jargon", ... written in simple and clear language..."[P5]</i>
Credibility	Accuracy	<i>" assessment tools...based on scientific and medical foundations ... to make patients trust the results ..."[P10]</i>
	Trustworthy	<i>"...developed by governmental health institutions that provide reliable health educational content."[P3]</i>
	Confidential	<i>"...maintain patient privacy... could motivate the user continue use the app... feel safe."[P4]</i>

Informational content



Utilitarian features

Utilitarian	Manage medications	Schedules	<i>"...alarms & the ability to create medication schedules."</i> [P4]
		Reminders	<i>"...set the medication taking times... organise refill times ...help patients avoid forgetting medications."</i> [P9]
		Medications diary	<i>"...locating the weekly injection site,... When chooses the same site, the app reject..., and the advice patient to change."</i> [P10]
	Self-monitoring	Health assessment	<i>"...use assessment tools...Disease Activity Score-28, Health Assessment Questionnaire and define the number of symptoms if they exist, patients need to see the clinician."</i> [P3]
		Adherence assessment	<i>"...adherence indicators that show if the patient is taking medications or not."</i> [P1]
		Goal setting	<i>"... providing goals related to medication taking, doing exercises, complying with medical appointments and examinations."</i> [P9]
		Feedback	<i>"... features that assess the symptoms should provide feedback based on the user data."</i> [P6]
	Usability	Easy to use	<i>"...no complex tasks... for setting reminders or searching information ..."</i> [P6]
		Easy to learn	<i>"... show how to add medications and this process should be smooth."</i> [P10]
		Safe to use	<i>"... appropriate and safe services for patients ... children group should use the app under the family supervision..."</i> [P5]
		Interactivity	<i>"... visual graphics and stimulating sounds when clicking on the buttons...and compliment after taking the medication."</i> [P8]
	Accessibility	Customizability	<i>"... personalized services designed to help diverse patients with different arthritis conditions ..."</i> [P10]
		Diversity of users	<i>"... serve different categories of society with health or digital literacy levels"</i> [P3]
		Internet access	<i>"Offline browsing to help different patients utilize the app services when they don't have network access."</i> [P6]



Motivational features

Motivational	Rewarded	Relevance	<i>“...valuable and relevant rewards to encourage patients maintaining an appropriate level of adherence.”[P8]</i>
		Sponsored	<i>“ ... sponsorship and partnership with institutes...to support chronic patients in our community.”[P7]</i>
		Prevent cheating	<i>“...ensure that the user does not fill data just to earn the rewards...”[P2]</i>



Socialization features

Socialization	Social support	By health professionals	<i>"... connect the physician to the patient to improve their relationship and follow-up." [P7]</i>
		By family and friends	<i>"Sharing medication schedules with family and friends..." [P10]</i>
	Social learning	Share experiences	<i>"...app community...help patients to share experiences and learn from others ..." [P5]</i>
	Social comparison	Competitions	<i>"...compare the adherence levels with the application community and avoid individual comparisons ..." [P10]</i>



Discussion & Conclusion

- The app should be designed to improve patient awareness of arthritis treatment and the importance of adherence.
- Usability, accessibility, and patient privacy are essential aspects.
- Users should be provided with rewards that can be earned by:
 - Completing health tasks
 - Building healthy habits
 - Progression
 - Positive participation in the arthritis community
- Focus groups were conducted with arthritis patients to understand their needs and preferences about the design of medication adherence support applications.



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