frontiers

Supplementary Material

1 Supplementary Table 1. Search strategies (taking PubMed as the example)

Search strategies:	
#1	"autonomy support*" [Title/Abstract] OR "autonomy promotion" [Title/Abstract] OR "autonomous support*" [Title/Abstract] OR "support for autonomy" [Title/Abstract] OR "support autonomy" [Title/Abstract] OR "respect for autonomy" [Title/Abstract] OR "respect autonomy" [Title/Abstract] OR "autonomy enhancing" [Title/Abstract] OR
#2	"Telemedicine" [MeSH Terms] OR "Mobile Health [Title/Abstract] OR "mHealth" [Title/Abstract] OR "Telehealth" [Title/Abstract] OR "eHealth" [Title/Abstract]
#3	"Remote Consultation" [MeSH Terms] OR "Consultation, Remote" [Title/Abstract] OR "Teleconsultation" [Title/Abstract] OR "Teleconsultations"[Title/Abstract]
#4	"Education, Distance" [MeSH Terms] OR "Distance Education" [Title/Abstract] OR "Distance Learning" [Title/Abstract] OR "Learning, Distance" [Title/Abstract] OR "Online Learning" [Title/Abstract] OR "Learning, Online" [Title/Abstract] OR "Online Education" [Title/Abstract] OR "Education, Online" [Title/Abstract] OR "Online Educations" [Title/Abstract] OR "Correspondence Courses" [Title/Abstract] OR "Correspondence Course" [Title/Abstract] OR "Course, Correspondence" [Title/Abstract]
#5	"Telenursing" [MeSH Terms]
#6	"Telephone" [MeSH Terms] OR "Telephones" [Title/Abstract] OR "Switchboard Service" [Title/Abstract] OR "Service, Switchboard" [Title/Abstract] OR "Services, Switchboard" [Title/Abstract] OR "Switchboard Services" [Title/Abstract]
#7	"Cell Phone" [MeSH Terms] OR "Phone, Cell" [Title/Abstract] OR "Phones, Cell" [Title/Abstract] OR "Cellular Phone" [Title/Abstract] OR "Cellular Phones" [Title/Abstract] OR "Phone, Cellular" [Title/Abstract] OR "Phones, Cellular" [Title/Abstract] OR "Telephone, Cellular" [Title/Abstract] OR "Cellular Telephone" [Title/Abstract] OR "Cellular Telephones" [Title/Abstract] OR "Telephones, Cellular" [Title/Abstract] OR "Cell Phones" [Title/Abstract] OR "Portable Cellular Phone" [Title/Abstract] OR "Cellular Phone, Portable" [Title/Abstract] OR "Cellular Phones, Portable" [Title/Abstract] OR "Portable Cellular Phones" [Title/Abstract] OR "Transportable Cellular Phone" [Title/Abstract] OR "Cellular Phone, Transportable" [Title/Abstract] OR "Cellular Phones, Transportable" [Title/Abstract] OR "Transportable Cellular Phones" [Title/Abstract] OR "Mobile Phone" [Title/Abstract] OR "Mobile Phones" [Title/Abstract] OR "Phone, Mobile" [Title/Abstract] OR "Phones, Mobile" [Title/Abstract] OR "Mobile Telephone" [Title/Abstract] OR "Mobile Telephones" [Title/Abstract] OR "Telephone, Mobile" [Title/Abstract] OR "Telephones, Mobile" [Title/Abstract] OR "Car Phone" [Title/Abstract] OR "Car Phones" [Title/Abstract] OR "Phone, Car" [Title/Abstract] OR "Phones, Car"
#8	"Patient Portals" [MeSH Terms] OR "Patient Web Portal" [Title/Abstract] OR "Portal, Patient Web" [Title/Abstract] OR "Portals, Patient Web" [Title/Abstract] OR "Web Portal, Patient" [Title/Abstract] OR "Web Portals, Patient" [Title/Abstract] OR "Patient Internet Portals" [Title/Abstract] OR "Patient Internet Portals" [Title/Abstract] OR "Patient Internet Portals" [Title/Abstract] OR "Patient Internet Portals" [Title/Abstract] OR "Internet Portal, Patient"

	[Title/Abstract] OR "Internet Portal, Patient" [Title/Abstract] OR "Internet Portals, Patient" [Title/Abstract] OR "Patient Internet Portal" [Title/Abstract] OR "Portal, Patient Internet" [Title/Abstract] OR "Portals, Patient Internet" [Title/Abstract] OR "Patient Web Portals" [Title/Abstract] OR "Patient Portal" [Title/Abstract] OR "Portal, Patient" [Title/Abstract]
#9	"Electronic Mail" [MeSH Terms] OR "Mail, Electronic" [Title/Abstract] OR "Email" [Title/Abstract] OR "Emails" [Title/Abstract] OR "E-Mail" [Title/Abstract] OR "E Mail" [Title/Abstract] OR "E-Mails" [Title/Abstract]
#10	"Television" [MeSH Terms] OR "Televisions" [Title/Abstract]
#11	"wechat" [Title/Abstract] OR "qq" [Title/Abstract] OR "QQ" [Title/Abstract] OR "YouTube" [Title/Abstract] OR "tiktok" [Title/Abstract]
#12	#2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11
#13	#1 AND #12

2 Supplementary Table 2. The sources and distribution of the attributes of autonomy support in telehealth.

References	Attributes						
	Technical feedback	Virtual agent	Choice	Rationale	Empathy	Collabo-ration	Strengths
Janssen & Schadenberg, 2024(1)	√	√	√	√		√	
Trzebiński et al., 2023(2)	√	√	√	√	√		
Li et al., 2023(3)	√		√	√	√	√	√
Kirkpatrick & Lawrie, 2023(4)	√		√	√	√	√	
Kim et al., 2023(5)	√		√	√	√	√	√
Cox et al., 2023(6)	√		√	√		√	
van Strien-Knippenberg et al., 2022(7)	√		√	√		√	
Legate & Weinstein, 2022) (8)			√	√			
Pettersson et al., 2021(9)	√		√	√			√
Formosa, 2021(10)	√	√	√	√			
Altendorf et al., 2021(11)	√		√	√			

Smit & Bol, 2020(12)				√			
Pirhonen et al., 2020(13)	√	√	√	√			√
Gültzow et al., 2020(14)	√		√	√		√	
Bradshaw et al., 2020(15)	√		√	√			
Altendorf et al., 2020(16)	√		√	√		√	
Smit et al., 2019(17)	√		√	√		√	
Lievense et al., 2019(18)	√		√	√	√		
Altendorf et al., 2019(19)	√		√	√	√	√	
Johnsen et al., 2018(20)				√			√
Kim & Kim, 2017(21)	√		√	√	√	√	√
Kinnafick et al., 2016(22)	√		√	√		√	
Bång & Ragnemalm, 2012(23)			√	√			
Resnicow et al., 2008(24)			√	√	√	√	√
Williams et al., 2007(25)	√		√	√		√	√

3 Supplementary Table 3. The benefits and challenges brought by autonomy support in telehealth.

References	Benefits	Challenges
Janssen & Schadenberg, 2024(1)	Enhanced patients' sense of freedom and internal motivation for behavior change.	The norms and beliefs that guide the development of social robots will have an impact on the patient experience.
Trzebiński et al., 2023(2)	Enhanced the level of patients' perception of autonomy support and their intentions for behavioral	1. The expert endorsement failed to have a positive impact on the patient. 2. The emotions displayed by the

	change.	chatbot might undermine the patient's autonomy.
Li et al., 2023(3)	Improved the patients' self-management ability, anxiety and depression, and quality of life.	It is necessary to provide training and education on smartphone applications and related knowledge to patients.
Kirkpatrick & Lawrie, 2023(4)	Enhanced patients' receptivity to health information.	The use of self-supportive language (such as "can", "might", "probably") is not sufficient to change attitudes and intentions towards behavior.
Kim et al., 2023(5)	Enhanced the patients' perseverance.	The development of information technology equipment requires a high cost.
Cox et al., 2023(6)	Enhanced the level of patients' autonomy support.	After the intervention, the patient experienced a sense of loss.
van Strien-Knippenberg et al., 2022(7)	1. Enhanced the effectiveness of health information. 2. Reduced cost-effectiveness.	The intervention is highly effective for patients with high needs for autonomy, while it is only moderately effective for those with low needs.
Legate & Weinstein, 2022)(8)	Promoted the motivation for individual behavioral change.	Highlighting the significance and urgency of information content is more effective than traditional self-support strategies.
Pettersson et al., 2021(9)	Enhanced the sense of freedom, confidence and autonomy that patients experienced.	The characteristics of autonomy support have changed in telehealth.
Formosa, 2021(10)	Promoted the autonomy of patients.	Manipulation, deskillification and illicit surveillance will undermine patients' autonomy.
Altendorf et al., 2021(11)	Enhanced the level of patients' perceived autonomy support and reduce psychological resistance.	The autonomy support language did not have any impact on the patient.
Smit & Bol, 2020(12)	/	There are differences in the needs for individual autonomy.
Pirhonen et al.,	Reduced patients' reliance	The differences in cultures from various regions will affect the

2020(13)	on professionals.	autonomy support provided by robots.
Gültzow et al., 2020(14)	Iterated the tools providing autonomy support.	The effectiveness of the tool needs to be further verified.
Bradshaw et al., 2020(15)	Enhanced the security of information and the effectiveness of information transmission.	Autonomy support requires information security guarantee.
Altendorf et al., 2020(16)	Enhanced the level of patients' perceived autonomy support.	The autonomy support language did not have any impact on the patient.
Smit et al., 2019(17)	Enhanced self-efficacy and behavioral motivation.	/
Lievense et al., 2019(18)	Enhanced self-efficacy and experiential sense.	It is difficult to maintain the long-term effect of behavioral changes.
Altendorf et al., 2019(19)	Enhanced the intention for behavioral change.	The control information does not necessarily undermine the autonomy of patients.
Johnsen et al., 2018(20)	Promoted patients' self-care behaviors.	/
Kim & Kim, 2017(21)	Changed bad habits.	/
Kinnafick et al., 2016(22)	Enhanced the effectiveness of information and the cost of intervention	Autonomy support intervention needs to fully consider the frequency and timing of information push in relation to the suitability for individuals.
Bång & Ragnemalm, 2012(23)	/	/
Resnicow et al., 2008(24)	Enhanced patients' motivation for behavioral change and their satisfaction with the intervention.	Further exploration is needed to uncover the characteristics of individuals.
Williams et al., 2007(25)	Enhanced patients' self-management ability	/

4 References

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