

Additional file 3 Dimensions and factors from 12 comprehensive checklists

Cabana 1999 [1]

Knowledge:

Lack of familiarity - volume of information, time needed to stay informed, guideline accessibility

Lack of awareness - Volume of information, time needed to stay informed, guideline accessibility

Attitudes:

Lack of agreement with specific guidelines - interpretation of evidence, applicability to patient, not cost-beneficial, lack of confidence in guideline developer

Lack of agreement with guidelines in general - too cookbook, too rigid to apply, biased synthesis, challenge to autonomy, not practical

Lack of outcome expectancy - physician believes that performance of guideline recommendations will not lead to desired outcomes

Lack of self-efficacy - physician believes that he/she cannot perform guideline recommendation

Lack of motivation/inertia of previous practice - habit, routines

Behaviour:

External barriers - patient factors (inability to reconcile patient preferences with guideline recommendations)

Guideline factors - guideline characteristics, presence of contradictory guidelines

Environmental factors - lack of time, lack of resources, organizational constraints, lack of reimbursement, perceived increase in malpractice liability

Cochrane 2007 [2]

Cognitive/behavioural barriers - knowledge, awareness, skill/expertise, critical appraisal skills

Attitudinal/rational-emotive barriers - efficacy/perceived competence, perceived/outcome expectancy, confidence in abilities, authority, accurate self-assessment

Health care professional/physician barriers - characteristics, age/maturity of practice, professional boundaries, legal issues, peer influence/models, gender, inertia

Clinical practice guidelines/evidence barriers - utility, evidence/disagree content, access, structure, local applicability

Patient barriers - patient characteristics/factors, patient adherence

Support/resources barriers - time, support, costs/funding issues, resources

System/process barriers - organizational, system, HR/workload/overload, team structure/work, referral process

Damschroder 2009 [3]

Intervention characteristics - intervention source, evidence strength & quality, relative advantage, adaptability, trialability, complexity, design quality and packaging, cost

Outer setting - patient needs & resources, cosmopolitanism, peer pressure, external policies & incentives

Inner setting - structural characteristics, networks & communications, culture, implementation climate (tension for change, compatibility, relative priority, organizational incentives & rewards, goals and feedback, learning climate), readiness for implementation (leadership engagement, available resources, access to knowledge and information)

Characteristics of individuals - knowledge & beliefs about the intervention, self-efficacy, individual stage of change, individual identification with organization, other personal attributes

Process - planning, engaging (opinion leaders, formally appointed internal implementation leaders, champions, external change agents), executing, reflecting & evaluating

Greenhalgh 2004 [4]

Innovation - inherent attributes (relative advantage, compatibility, low complexity, trialability, observability, reinvention), operational attributes (task relevance, task usefulness, feasibility, implementation complexity, divisibility, nature of knowledge needed)

Adopters and adoption - characteristics and needs, meaning of the innovation, nature of the adoption decision, concerns (at pre-adoption stage, early use stage, experienced user stage)

Communication and influence - nature of networks, main agents of social influence

Inner context - structural features of the organisation (size/maturity, complexity/differentiation, decentralisation, slack resources), organisation's absorptive capacity for new knowledge (skill mix, knowledge base, transferable know-how, ability to evaluate the innovation), receptive context (leadership and vision, values and goals, risk-taking climate, internal and external networks), organisation's readiness (organisational fit, assessment of implications, dedicated time/resources, broad based support)

Outer context - socio-political climate, external incentives and mandates, prevailing norms from other comparable ('opinion leader') organisations

Implementation and sustainability - implementation process (human resources, involvement of key staff, project management), response to consequences of innovation (e.g. audit and feedback), measures to adapt and re-invent the innovation (e.g. inter-organizational networks and collaboratives)

External agencies - linkage between developers and users of the innovation at the development stage, shared value systems, shared language and meanings, external change agents (homophily, positive relationships and client-centeredness, shared language and meaning), social marketing principles (audience segmentation, assessment of target group needs and perspective, appropriate message and marketing channels, good programme management, process evaluation), relationship between change agency and intended adopter organisations

Gurses 2010 [5]

Clinician characteristics - awareness, familiarity, agreement, self-efficacy, outcome expectancy, motivation/inertia of previous practice, normative beliefs, subjective norm

Guideline characteristics - relative advantage, compatibility, complexity, trialability, observability, strength of evidence, exception ambiguity

System characteristics - task characteristics (e.g. workload, task ambiguity, responsibility ambiguity, method ambiguity), tools-technologies (e.g. supplies, checklist, method ambiguity), physical environment (e.g. layout, workspace, noise), organizational characteristics (e.g. culture, teamwork, communication, expectation ambiguity, method ambiguity)

Implementation characteristics - tension for change, mandate/preparation-planning, leader and middle manager involvement and support, change agents' characteristics, relative strength of supporters (opinion leaders) and opponents, exploration of problem and customer/staff needs, getting ideas from outside the organization, funding availability, monitoring and feedback mechanisms, clarity and simplicity of the implementation plan, segmentation and targeting, exchange of value and marketing mix (4 Ps), attention to behavioural competition

Kitson 2008 [6]

Evidence - research, clinical experience, patient experience

Context - context, culture, leadership, evaluation

Facilitation - purpose, role, skills and attributes

Mäkelä 1999 [7]

Professionals:

Knowledge - knowledge about existence of guideline, knowledge about own practice differing from guideline, knowledge for complying with guideline, other (specify)

Skills - skills for locating or fetching guideline (e.g. from Internet), individual skills for complying with guideline, team skills for complying with guideline, organisational competence for complying with the guideline, other (specify)

Attitudes - patient's values differ from those of the professional or those in the guideline, relative's values differ from those of the professional or those in the guideline, social group's values differ from those of the professional or those in the guideline, other (specify)

Other resources - money, assistance, other (specify)

Patients:

Knowledge - knowledge about existence of guideline, understanding of guideline content, other (specify)

Skills - understanding recommendations by the professional, ability to follow recommendations by the professional, other (specify)

Attitudes - patient's values differ from those of the professional, or those in the guideline, relative's values differ from those of the professional or those in the guideline, social group's values differ from those of the professional or those in the guideline, other (specify)

Other resources - money, assistance, other (specify)

Environment:

Social factors - support for or discouragement of change by others (colleagues at practice site, other members of professional team, managers, other local health care providers, opinion leaders, patients, professional organisations, patient organisations, other (specify)

Organisational factors - availability of guidelines at workplace, practicality within existing practice setting or routines, local infrastructures or rules, other (specify)

Economic factors - availability/lack of resources (time, personnel etc.), change in income for provider, changed cost for patient, changed cost for practice organisation, changed cost for health care system, other (specify)

Michie 2005 [8]

Knowledge - knowledge, knowledge about condition / scientific rationale, schemas+mindsets+illness representations, procedural knowledge

Skills - skills, competence/ability/skill assessment, practice / skills development, interpersonal skills, coping strategies

Social/professional role and identity (self-standards) - identity, professional identity/boundaries/role, group/social identity,

social/group norms, alienation/organisational commitment

Beliefs about capabilities (self-efficacy) - self-efficacy, control-of behaviour and material and social environment, perceived competence, self-confidence/professional confidence, empowerment, self-esteem, perceived behavioural control, optimism/pessimism

Beliefs about consequences (anticipated outcomes/attitude) - outcome expectancies, anticipated regret, appraisal/evaluation/review, consequents, attitudes, contingencies, reinforcement/punishment/consequences, incentives/rewards, beliefs, unrealistic optimism, salient events/sensitisation/critical incidents, characteristics of outcome expectancies (physical, social, emotional), sanctions/rewards (proximal/distal, valued/not valued, probable/improbable, salient/not salient, perceived risk/threat)

Motivation and goals (intention) - intention (stability of intention/certainty of intention), goals (autonomous, controlled), goal target/setting, goal priority, intrinsic motivation, commitment, distal and proximal goals, transtheoretical model and stages of change

Memory, attention and decision processes - memory, attention, attention control, decision making

Environmental context and resources (environmental constraints) - resources/material resources (availability and management), environmental stressors, person x environment interaction, knowledge of task environment

Social influences (norms) - social support, social/group norms, organisational development, leadership, team working, group conformity, organisational climate/culture, social pressure, power/hierarchy, professional boundaries/roles, management commitment, supervision, inter-group conflict, champions, social comparisons, identity (group/social identity), organisational commitment/alienation, feedback, conflict (competing demands, conflicting roles, change management, crew resources management, negotiation, social support (personal/professional/organisational, intra/interpersonal, society/community)

Emotion - affect, stress, anticipated regret, fear, burn-out, cognitive overload/tiredness, threat, positive/negative affect, anxiety/depression

Behavioural regulation - goal/target setting, implementation intention, action planning, self-monitoring, goal priority, generating alternatives, feedback, moderators of intention-behaviour gap, project management, barriers and facilitators

Nature of the behaviours - routine/automatic/habit, breaking habit, direct experience/past behaviour, representation of tasks, stages of change model

NICS 2006 [9]

The innovation itself - feasibility, credibility, accessibility, attractiveness

Individual professional - awareness, knowledge, attitude, motivation to change, behavioural routines

Patient - knowledge, skills, attitude, compliance

Social context - opinion of colleagues, culture of the network, collaboration, leadership

Organisational context - care processes, staff, capacities, resources, structures

Economic and political context - financial arrangements, regulations, policies

Saillour-Glenisson 2003 [10]

Clinical practice guideline (CPG) characteristics - form, compatibility, trialability, scientific basis, observability, adaptability, legal implications

Physician characteristics - knowledge about the CPG, attitude and agreement to CPG, psychological and socio-demographic and economic characteristics, job satisfaction, training

Physician environment - physician human environment (patient influence, peer influence), physician organizational environment (internal environment, external environment)

SURE 2011 [11]

Recipients of care - knowledge and skills, attitudes regarding programme acceptability, appropriateness and credibility, motivation to change or adopt new behaviour

Providers of care - knowledge and skills, attitudes regarding programme acceptability, appropriateness and credibility, motivation to change or adopt new behaviour

Other stakeholders (including other healthcare providers, community health committees, community leaders, programme managers, donors, policy makers and opinion leaders)- knowledge and skills, attitudes regarding programme acceptability, appropriateness and credibility, motivation to change or adopt new behaviour

Health system constraints - accessibility of care, financial resources, human resources, educational system, clinical supervision, internal communication, external communication, allocation of authority, accountability, management or leadership, information systems, facilities, patient flow processes, procurement and distribution systems, incentives, bureaucracy, relationship with norms and standards

Social and political constraints - ideology, short-term thinking, contracts, legislation or regulations, donor policies, influential people, corruption, political stability

Wensing 2005 [12]

Individual level:

Cognitive factors - information behaviour, domain knowledge

Motivational factors - motivation, beliefs about consequences, attitudes, perceived subjective norms, beliefs about capabilities, emotion

Behavioural factors - behavioural regulation, skills

Professional interaction:

Interaction in professional teams - team cognitions, team processes

Structure of professional networks - leadership and key individuals, social network characteristics

Organisational level:

Organizational structures - specification, flexibility, leadership structure, specialization

Organizational processes - continuous improvement, external communication, internal communication

Organizational resources - technical knowledge, organizational size

Factors related to structures:

Societal factors - professional development, priority on societal agenda

Financial incentives - positive incentives, provider and patient financial risk sharing, transaction costs, competition intensity

Regulations - purchaser-provider contract relationships

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