

How to best assess acceptability of risk-stratified cancer screening: an overview and adaptation of theoretical frameworks

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Objective

Acceptability is a complex and poorly defined concept, being uptake rates often used for its measurement. Although there is broad evidence of the efficacy of personalized screening, few studies have examined its acceptability among the target population. **Our objective was to review the available frameworks on acceptability in healthcare interventions and to adapt it to assess acceptance of personalized screening within the Colorectal Cancer Screening Program in Barcelona (CRCSP-Bcn, Spain) target population.**

Methods

First, we reviewed different implementation science frameworks used in population-based interventions. Second, we searched for strategies used to assess acceptability of risk-stratified and prevention programs. Finally, we discussed this issue in different meetings with a group of multidisciplinary experts in qualitative and quantitative methodology as well as cancer screening research, until we reached a consensus.

Results

Seven frameworks were identified (Table 1): 1. Consolidated Framework for Implementation Research (CFIR); 2. Research, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM); 3. Practical Implementation Sustainability Model (PRISM); 4. Health Belief Model (HBM); 5. Social Ecological Model (SEM); 6. Predisposing, Reinforcing and Enabling in Educational Diagnosis and Evaluation (PROCEDE)- Policy, Regulatory and Organizational in Educational and Environmental Development (PROCEED) model; and 7. Theoretical Framework of Acceptability (TFA). The seven frameworks were categorized into 4 types: evaluation, determinant, process and expectancy-value. All of them have been broadly used to assess interventions and innovation projects during the past 10 years. However, only the expectancy-value frameworks provide at least two dimensions to assess the intervention from the receiver's point of view, whereas the other frameworks are mainly centered on deliverers and the health-care system organizations.

Acceptability is a multidimensional and theoretical construct. Therefore, when we are assessing a hypothetical future intervention such as personalization of screening, asking for an abstract concept may hinder a deep comprehension of the phenomenon for our target population. To assess such a multi-faced construct, different dimensions and sub-elements should be covered to provide a wide overview of acceptability.

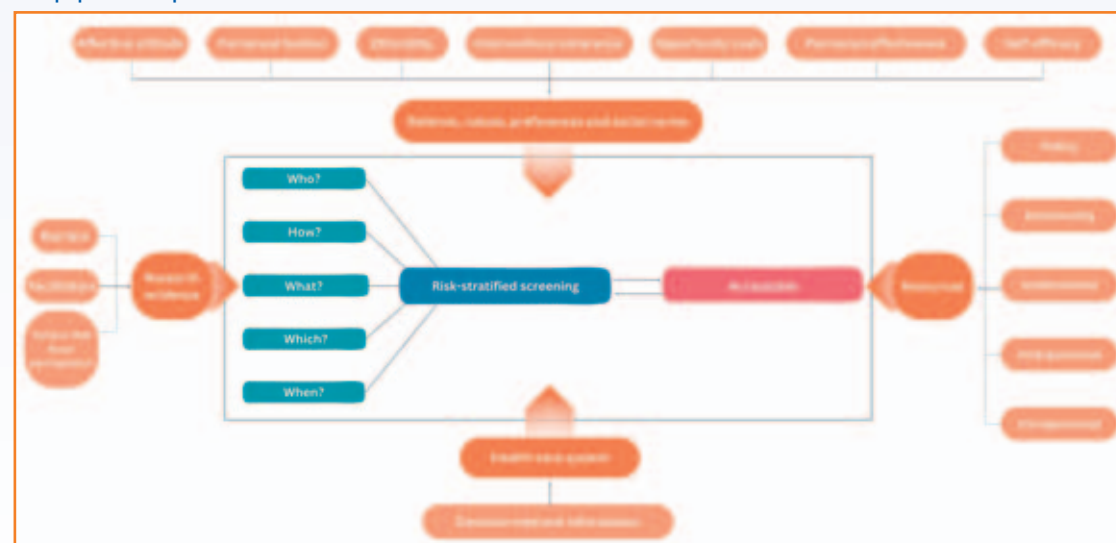
Figure 1 shows the adapted theoretical framework we have developed, the result of merging the TFA and the SEM frameworks. We also recognize the influence of the ENVISION Consensus Statement on Personalized Early Detection and Prevention of Breast Cancer on the conceptualization. These frameworks were considered most appropriate because, on the one hand, the TFA allows assessing relevant core constructs for the personalization of screening and focuses on the perspective of the receivers of the intervention, whereas the SEM is useful to analyze the intervention from different contextual levels. Furthermore, adding research evidence and decision-relevant information as tangible and understandable information may act as a mediator to deepen the rest of the constructs and explain the personalization of screening to our target population. Other frameworks were dismissed because they were mostly or solely focused on professionals' perspectives.

Table 1. Identified implementation science and acceptability frameworks used in interventions and innovation projects in ongoing population-based screening programs.

Publication: Author, year [reference]	Frameworks	Aim	Type	Domains	Number of sub-elements	Online technical assistance
1 Damschroder, 2009 [1]	CFIR	"...to promote implementation theory development across multiple contexts"	Determinant	4	39	www.cfirguide.org
2 Glasgow, 1999 [2]	RE-AIM	"...to encourage program planners and policy-makers to improve the sustainable of effective, generalizable, evidence-based interventions"	Evaluation	5	N/A	www.re-aim.org
3 Feldstein & Glasgow, 2008 [3]	PRISM	"...contextually expanded version of the RE-AIM"	Evaluation	3	39	www.re-aim.org/learn/prism
4 Rosenstock, 1974 [4]	HBM	"...focuses on threat perception and behavioural evaluation"	Expectancy-value	6	N/A	N/A
5 McLeroy, 1988 [5]	SEM	"... to direct attention to determinants from an ecological perspective"	Determinant	5	N/A	N/A
6 Green & Kreuter, 1992 [6]	PROCEDE-PRCEED	"...for practitioners to determine, develop, implement and evaluate health promotion programs"	Process	8	N/A	N/A
7 Sekhon, 2017 [7]	TFA	"...to assess either the perspective of intervention delivers and recipients"	Expectancy-value	7	N/A	N/A

Consolidated Framework for Implementation Research (CFIR); Research, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM); Practical Implementation Sustainability Model (PRISM); Health Belief Model (HBM); Social Ecological Model (SEM); Predisposing, Reinforcing and Enabling in Educational Diagnosis and Evaluation (PROCEDE)- Policy, Regulatory and Organizational in Educational and Environmental Development (PROCEED) model; and Theoretical Framework of Acceptability (TFA).

Figure 1. Adapted theoretical framework for assessing the acceptability of the risk-stratified intervention from the CRCSP-Bcn populations' point of view.



Conclusions

Implementation of risk-stratified early detection and prevention strategies will eventually be used by most population-based cancer screening programs. Assessment of acceptability is essential to engaging our target population in the proposed tailored-strategy and ensuring the level of uptake. An adapted theoretical framework for assessing the acceptability of the risk-stratified intervention from our populations' point of view would be helpful to study its potential feasibility as well as for the design of its future implementation, evaluation and maintenance.

References

1. Damschroder LJ, et al. Implementation Science. 2009
2. Glasgow RE, et al. Am J Public Health. 1999
3. Feldstein AC. Jt. Comm. J. Qual. Patient Saf. 2008
4. Rosenstock IM. Health Education Monographs. 1974
5. Bronfenbrenner U. Harv Univ Press. 1981
6. Green LW, et al. J. Health Educ. 1992
7. Sekhon M, et al. BMC Health Serv. Res. 2017