



Intrinsic Motivation and Institutional Limitations: Key Implementation Determinants of Psychological First Aid Training

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Abstract

Psychological first aid (PFA) trainings are conducted to train frontline care workers in practical and emotional support to people who have been recently affected by stressful events. The aim of this study was to describe the determinants of the implementation behavior of a PFA training strategy in Chile and to provide theoretical information on the factors that influence trainers' self-efficacy. For this purpose, the Determinants of Implementation Behavior Questionnaire, administered online to a sample of 117 PFA trainers throughout Chile, was used. The results indicate that the main facilitators for implementation originate in the intrinsic motivation of the trainers, while the barriers are mainly found in the limited institutional opportunities offered by the context. Evidence was also found on the effect of motivation and context on trainer self-efficacy. PFA trainers may need to invest a lot of psychological resources to overcome the barriers encountered during implementation.

Keywords Evidence-based · Innovation · Implementation · Psychological First aid

Introduction

Impact of Disasters on Mental Health

According to the *Centre for Research on the Epidemiology of Disasters* (CRED; 2022a) during the first two decades of the 21st century, more than 7,000 natural disasters occurred, claimed approximately 1.23 million lives around the world. In 2021, one-third of these natural phenomena took place on the American continent, placing it as the second most damaged by disasters (CRED, 2022b).

These disasters cause economic and infrastructure losses, injuries and deaths, in addition to psychosocial problems

among the survivors of the affected communities (Barrales-Díaz et al., 2013). The events that took place in the world in recent years have brought to the fore that it is not enough to have hospital infrastructure, health centers or regional health organizations, it is also necessary for mental health services to react in a timely manner to assess emerging needs and give assertive responses during disaster and emergency situations (Esterwood & Saeed, 2020; North & Pfefferbaum, 2013). Such services help prevent the development of mental disorders such as post-traumatic stress, dissociative reactions, mood disorders and addictive disorders, as well as the increase in domestic violence and sexual abuse among survivors (Makwana, 2019).

According to the United Nations Office for Disaster Risk Reduction, Chile is considered a dangerous country to live in due to its geographical and demographic characteristics, which imply higher exposure to disasters than in other countries (UNDRR, 2019). Diverse disasters have been recorded throughout the history of the country, including the strongest earthquake in the world, which happened in the city of Valdivia in 1960. In the last decade, Chile has faced events of natural origin such as earthquakes, tsunamis, forest fires, floods, volcanic eruptions and even events with less frequent historical occurrence like tornados. Likewise, it has faced anthropogenic events such as the increase of violent

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episodes in public spaces or multiple-victim accidents. It is calculated that more than half the population is consistently exposed to three or more types of disaster risk threats, as well as to an increase in their severity and frequency, associated with climate change (ONEMI, 2020). Therefore, the country requires developing systems capable of readily taking care of the psychological needs of its inhabitants.

Psychological First Aid Training in Chile

In response to this situation, a Chilean public policy initiative has been the creation of the National Intersectoral Training Plan for Psychological First Aid (PFA), led by the Ministry of Health (MINSAL) with the support of the Pan American Health Organization (PAHO) and the United Nations Children's Fund (UNICEF) that, following the guidelines of the World Health Organization (WHO), implemented through a public model of 'cascade training' (WHO, 2018). This knowledge transfer model aims to create a national network of facilitators capable of training personnel to deliver PFA in the event of an emergency or disaster. To this end, institutions train trainers of trainers, who in turn are deployed throughout the country to train trainers, who in turn train those who will ultimately deliver PFA to potential beneficiaries (Reyes Ponce De León, 2018).

The instructional design used in Chile is a cultural adaptation of WHO's Psychological First Aid: Facilitator's Manual for Orienting Field Workers (WHO et al., 2018), created by MINSAL and refined through pilot training implementations (MINSAL et al., 2018).

In general, the goal of PFA training is to provide people with the knowledge and skills to respond effectively to individuals in a state of stress and to assist in meeting their emotional and practical needs (Wang et al., 2021). Some studies have shown that PFA training benefits not only those affected by disasters, but also those who provide treatment. Effects include a better understanding of mental health, which can help victims recognize signs of distress in themselves and others; greater confidence in the effectiveness of treatment, potentially increasing resilience and crisis management skills; less negative attitudes toward others, more supportive behaviors toward individuals with mental health problems, a reduction in stigma, and increased self-confidence to help individuals cope with emergency situations (Everly et al., 2014; Horn et al., 2019; Montenegro & Cabello, 2018).

The PFA training of this plan is implemented by institutions that are part of the Inter-sector Technical Table for Mental Health and Psychosocial Support in Disaster Risk Management, include MINSAL, the National Office for Emergencies (ONEMI) of the Ministry of Internal Affairs,

the Ministry of Education, Carabineros de Chile, and the Forensic Medical Service, among others (MINSAL, 2021).

These trainings are delivered through workshops for professionals and non-professionals who can provide the first response and humanitarian support to populations recently affected by disasters and critical events. The trainings aim to teach the implementation of PFA principles in an ethical and safe way. Trainers promote helping behaviors from a person-centered perspective, emotional support and psychoeducation, seeking to maximize the use of available resources and preventing patients from causing further harm with their actions during the critical event (MINSAL, ONEMI et al., 2018).

Given the high-risk content and innovation characteristics, it is relevant to identify elements associated with the success of the workshops, derived both their execution and external factors, in order to strengthen the development of these interventions. In this sense, it is known that the benefits of these programs depend on their implementation and that they only achieve the expected results when conducted faithfully, i.e., an execution that follows the guidelines and previous planning to the letter (Frank et al., 2020).

Implementation Science

Kok et al. (2016) considers that during the development of evidence-based interventions such as PFA, it is common that the methods and theories on which they are built disappear in the process of translating them into practice, diluting the possible benefits of the innovation. Therefore, it is necessary to advocate for theoretical approaches that allow for understanding the determinants of implementation behavior, particularly in contexts such as Latin America, where cost-effectiveness relations are highly important and the results of this type of study can generate changes in the lives of the patients of these programs (Agudelo-Hernández & Rojas-Andrade, 2021).

In this sense, we can find determinants of implementation at different levels of analysis, for example, at the macro level, cultural, social or political, as well as at the micro level, local, institutional or individual. The COM-B is a theoretical framework that attempts to explain the individual determinants of implementation behavior through three constructs that are Motivation, Capabilities and Opportunities, indicating that for a person to execute this behavior it is necessary that their motivation to perform it is greater than the motivation they have to do any other behavior, that they have the necessary knowledge and skills to carry it out and that they perceive that in the context the necessary opportunities and supports to do so (West & Michie, 2020). This is conceptually linked to the Theoretical Domains Framework (TDF), an integrative theory consisting of 14 domains that

allow for a detailed analysis of each of the COM-B dimensions (Cane et al., 2012).

Based on these theoretical frameworks, Huijg et al. (2014) created the Determinants of Implementation Behavior Questionnaire (DIBQ), an instrument designed to assess the individual determinants of implementation of various evidence-based interventions. It consists of 18 factors, which adequately correspond to the 14 original domains and fit the COM-B dimensions (see Table 1).

Initially, Huijg et al. (2014) used the DIBQ to assess the implementation determinants of a program for physical

activity physiotherapists. Subsequently, this instrument has been used in rehabilitation and physical therapy programs (Ris et al., 2021; Schröder et al., 2020), in the implementation of screening and referral protocols for mental health problems (Clemson et al., 2021), in substance use and abuse prevention programs (Zaffar et al., 2018), in the implementation of protocols for health services during the COVID-19 emergency (Okuyan et al., 2021) and to evaluate the training of professionals in mental health-focused interventions (Terpstra et al., 2018; Kutner et al., 2020). Its use has made it possible to identify in which settings there are more barriers

Table 1 Domain definitions for the determinants of implementation behavior questionnaire and integrating concepts of COM-B

| Domain | Definition |
|---------------------------------------|---|
| Capacity | Psychological or physical sufficiency to conduct the delivery of the innovation. |
| Knowledge | Knowledge on how to apply innovation according to their guidelines and awareness of the role, objectives and responsibilities expected from implementers. |
| Skills | Training, skills and experience necessary to conduct the innovation according to its guidelines. |
| Behavior regulation | Capacity to plan the actions required to successfully apply the innovation according to its guidelines and respond to unexpected situations during execution. |
| Nature of the behaviors | Capacity to automate and memorize the set of responses required to conduct the innovation according to its guidelines. |
| Motivation | Reflexive and automatic mechanisms that activate or inhibit the delivery of innovation. |
| Social/professional role and identity | Belief that, due to their profession, implementers will have the behaviors and skills necessary to apply the innovation according to its guidelines. |
| Beliefs about capacities | Beliefs about their own capacity of apply the innovation as stated in the guidelines and about the difficulty posed by this task. |
| Optimism | Confidence that things will go well or that the desired objectives will be achieved. |
| Beliefs about consequences | Opinions and attitudes towards the effects that applying the innovation following its guidelines will have on the person and others. |
| Intentions | Determination showed by the implementer when applying the innovation in the future according to its guidelines. |
| Goals | Prioritizing the application of the innovation according to its guidelines over other activities. |
| Positive emotions | Pattern of positive responses that include physiological and behavioral elements caused by applying the innovation, e.g., calm, relaxation, or joy. |
| Negative emotions | Pattern of negative responses that include physiological and behavioral elements caused by applying the innovation, e.g., stress, sadness or discomfort. |
| Opportunity | Physical and social environment that allows for or hinders the application of the innovation. |
| Innovation | Any characteristic of the innovation that discourages or promotes its application following the guidelines, e.g., the facility of its execution or its adaptability to the context. |
| Sociopolitical context | Any characteristic of the sociopolitical context that discourages or promotes its application following the guidelines, e.g., the support of government or private institutions or the adaptation of the legal framework. |
| Organization | Any characteristic of the organization in charge of the innovation that discourages or promotes its application following the guidelines, e.g., the support from management or resources for innovation. |
| Patient | Any characteristic of the patients of the innovation that discourages or promotes its application following the guidelines, e.g., motivation or attitudes. |
| Innovation strategy | Any characteristic of innovation strategy that discourages or promotes its application following the guidelines, e.g., quality of supervision spaces, materials, or available information about the results. |
| Social influences | Those interpersonal processes that occur between the implementers of the innovation and that may make them change their thoughts, feelings, or behaviors towards the application of the innovation following its guidelines, e.g., Peer support or social pressure. |

Note Created by the authors based on the concepts used by Huijg et al. (2014)

and facilitators to the implementation of these innovations, as well as to plan the mechanisms needed to provide more support to the people who implement them.

Self-Efficacy in Implementation

Self-efficacy has been studied as one of the variables related to implementation fidelity, and is used primarily in research on behavior change programs, mental health care, and intervention training. Self-efficacy is generally defined as the confidence of implementers in successfully delivering innovations in the near future (Shapiro et al., 2021).

In addition, self-efficacy has been observed to function as a protective variable for implementers, reducing the likelihood of mental problems associated with healthcare delivery (Kim et al. 2018). Furthermore, it increases the fidelity and adhesion of implementers to intervention guidelines (Ager et al., 2011; Andersen et al., 2021; Campbell et al., 2013).

Although implementer's self-efficacy is a commonly used variable as a predictor or mediator of innovation adherence, fidelity, or reach, there is a lack of clarity about the determinants of implementation behavior that influence it (Shapiro & Charest, 2020). Some studies have tentatively indicated that self-efficacy might be determined by prior skills or training (Kerns et al., 2016), innovation strategies, or organizational characteristics and supports (Campbell et al., 2013).

Objective of the Study

This study seeks to contribute theoretical and practical information to the discussion on the factors that influence the self-efficacy of implementation behavior, through their relationship with different variables that make up the TDF and the COM-B.

Likewise, this theoretical framework will be used to evaluate the determinants of the implementation behavior of PFA training in Chile, in order to gather information about the barriers and facilitators involved in the efficacy of the intervention.

Methods

Participants and Procedure

This study uses an associative strategy and a cross-sectional predictive design (Ato et al., 2013). This implies that the objective of this work is not just a description, as it is also focused on the association between variables, in this case the determinants of implementation behavior and self-efficacy.

The study makes use of data from the evaluation of the implementation of the national PFA training plan provided in Chile by governmental institutions such as the Chilean Ministry of Health, the National Service for Disaster Prevention and Attention, the Ministry of Education, the National Police of Chile and the Forensic Medical Service, and others.

The target population is also made up of people who have gone through a training process carried out by higher education institutions in the country, which consists of four blocks or modules of 4 h each, covering the following content: (1) Reception and introduction of participants and introduction to the National Civil Protection System and the Mental Health Model in Disaster Risk Management in Chile; (2) Theoretical foundations of PFA, needs of people during an emergency or disaster, and simulation of a natural disaster; (3) Principles of action, preparation of materials, collection of information about the emergency or disaster, and identification of safety measures; (4) training in simulation exercises and role-playing, basics of caring for people in vulnerable situations, general evaluation of the PFA model, bureaucratic aspects of the model used in Chile; completion of this course grants a certification issued by OPS, UNICEF, and MINSAL that qualifies the person to give PFA courses to other professionals (MINSAL et al., 2018; Reyes Ponce De León, 2018).

The questionnaire was sent to 827 people, which is the total number of people who had undergone this training and had subsequently conducted a workshop in the last two years. One hundred and seventeen PFA trainers responded the whole questionnaire, which represents a response rate of 14.15%. The mean age of the respondents was 40.61 years. 65.81% identified themselves as women. 22.22% had graduate studies. 59.48% were psychology professionals, while the rest belonged to other social sciences, health, education or were involved in administrative tasks. Finally, participants had given an average of 2.1 training workshops (see Table 2).

Measures

Implementation Determinants

A version of the Huijg et al. (2014) DIBQ translated into Spanish and adapted for the PFA training context was used. This version contained 94 items distributed in 18 TDF domains that were subsequently grouped in 3 dimensions of the COM-B model. Each item of the questionnaire was answered on a 5-point Likert-type scale, where 1 corresponded to Completely disagree and 5 to Completely agree. To facilitate data analysis, the questions in the "negative emotions" domain were reversed as they were negatively

Table 2 Demographic characteristics of respondents

| Demographic variable | M | SD | % | n |
|--------------------------------------|-------|------|--------|----|
| Gender | | | | |
| Female | | | 65.81% | 77 |
| Male | | | 31.62% | 37 |
| Other | | | 2.56% | 3 |
| Age | 40.61 | 10.2 | | |
| Educational level | | | | |
| Undergraduate | | | 77.78% | 91 |
| Graduate | | | 22.22% | 26 |
| Professional field | | | | |
| Psychology | | | 59.48 | |
| Social Sciences | | | 20.69 | |
| Health | | | 11.21 | 21 |
| Administration | | | 6.03 | 58 |
| Education | | | 2.59 | 21 |
| Number of workshops conducted | 2.10 | 1.58 | | 17 |

worded. Cronbach's alpha was calculated for each instrument dimension, with the lowest one being 0.838 (Capacities) and the highest one 0.916 (Motivation).

Self-Efficacy

Following a procedure similar to previous studies (Ager et al., 2011; Kim et al., 2018; Shapiro & Charest, 2020), trainers' level of self-efficacy was measured through a single question: "How successful would your performance be if you had to deliver a PFA training tomorrow in an emergency or disaster situation? Then, each trainer was asked to rate the degree of success expected using a scale from 1 to 100, where 1 implied "absolutely unsuccessful" and 100 "absolutely successful".

Data Analysis

Statistical analysis was performed using SPSS v.26 data processing software. The analysis included the calculation of descriptive statistics for each dimension and domain of the DIBQ. Considering that in the field of implementation science one tends to assume that distributions with negative skewness will be found, so cut-off criteria during evaluations should be strict (Coddling & Lane, 2015). Therefore, values above 4 points, corresponding to 80% of the scale, were considered high; scores below this threshold were considered low.

On the other hand, correlations and mean differences were calculated for dimension and domain of the DIBQ as a function of the sociodemographic variables collected, in the text only those in which there was a significance > 0.05 or > 0.01 are presented. Finally, a regression analysis was performed to evaluate the predictive capacity of the sociodemographic variables and the DIBQ on self-efficacy.

Table 3 Descriptive statistics and correlations of the sample scores on the DIBQ

| Domain | M | SD | NWC ^r | Age ^r |
|-----------------------------------|--------------|--------------|------------------|------------------|
| Capacities | 3.694 | 0.503 | 0.289** | -0.132 |
| Knowledge | 4.282 | 0.559 | 0.137 | -0.026 |
| Skills | 4.333 | 0.579 | 0.195 | -0.071 |
| Behavior regulation | 3.279 | 0.709 | 0.303** | -0.108 |
| Nature of the behaviors | 3.255 | 0.668 | 0.226* | -0.168 |
| Motivation | 3.855 | 0.504 | 0.187 | -0.072 |
| Professional/Social Role/Identity | 3.485 | 0.922 | 0.191 | 0.022 |
| Beliefs about capacities | 3.672 | 0.579 | 0.121 | -0.105 |
| Optimism | 3.924 | 0.693 | -0.028 | -0.205* |
| Beliefs about consequences | 4.172 | 0.537 | 0.087 | -0.018 |
| Intentions | 3.270 | 0.323 | 0.274** | -0.148 |
| Goals | 3.363 | 0.615 | 0.185 | -0.032 |
| Positive emotions | 3.995 | 0.665 | 0.115 | -0.087 |
| Negative emotions | 4.277 | 0.617 | 0.095 | 0.167 |
| Opportunity | 3.449 | 0.549 | 0.228* | -0.192 |
| Innovation | 3.503 | 0.694 | 0.124 | -0.100 |
| Sociopolitical context | 2.895 | 0.702 | 0.079 | -0.272** |
| Organizational context | 3.421 | 0.949 | 0.186 | -0.207* |
| Patients | 4.270 | 0.535 | 0.010 | -0.093 |
| Innovation strategies | 3.135 | 0.889 | 0.214* | -0.170 |
| Social influence | 3.599 | 0.658 | 0.270** | -0.034 |

Note Bolded mean scores > 4

NWC = Number of workshops conducted

^rPearson's correlations;

* $p > 0.05$

** $p > 0.01$

*** $p > 0.001$

Results

Table 3 shows the descriptive statistics and correlations with the number of workshops given and age for each dimension and domain of the DIBQ. First, it is observed that the three main dimensions of the instrument are below the cutoff point < 4 , with Motivations being the highest ($M = 3.694$; $SD = 0.503$) and Opportunities the lowest ($M = 3.449$; $SD = 0.549$), implying that they are determinants with low development.

In detail, the Knowledge ($M = 4.282$; $SD = 0.559$) and Skills ($M = 4.333$; $SD = 0.579$) domains in the Capabilities dimension; the Negative Emotions ($M = 4.172$; $SD = 0.537$) and Beliefs about consequences ($M = 4.277$; $SD = 0.617$) domains in the Motivations dimension; and the Patients ($M = 4.270$; $SD = 0.535$) domain in the Opportunities dimension stand out with high scores. This implies that these are the most developed domains possessed by the participants with respect to the implementation of the PFA trainings.

On the other hand, significant, positive and low-magnitude correlations were found between the number of

conducted workshops and Capacities ($r = .298, p < .01$), as well as Opportunities ($r = .228, p < .05$). In addition, trainers who have delivered a higher number of workshops tend to perceive themselves as having a higher Behavior regulation capacity ($r = .303, p < .01$), a more naturalized behavior ($r = .226, p < .05$), and higher Intentions to apply the information ($r = .274, p < .01$). They also perceive that they have more support from Innovation strategies ($r = .214, p < .05$) and are more affected by Social Influence ($r = .270, p < .01$).

In terms of age, significant negative and low correlations were found with Optimism ($r = -.205, p < .05$), socio-political context ($r = -.272, p < .01$) and organizational context ($r = -.207, p < .05$), indicating that older trainers tend to perceive institutional supports at these levels to be worse and feel less optimistic about the outcomes of their interventions.

Finally, multiple linear regressions were performed to assess the predictive ability of the dimensions and domains of the DIBQ and the sociodemographic variables with respect to self-efficacy. First, a model was estimated using a forced-entry method to predict the effect of the three dimensions corresponding to the COM-B on self-efficacy (see Table 4; Fig. 1). The only statistically significant predictor was motivation ($F(3.95) = 15.390; p < .01; R^2 = 0.327; \beta = 0.616$).

A model including all the DIBQs corresponding to the TDF domains and the sociodemographic variables was calculated using the stepwise method (see Fig. 2). The equation found three statistically significant predictors: ($F(3.95) = 16.824; p < .01; R^2 = 0.326$) Beliefs about consequences ($\beta = 0.323$), Negative emotions ($\beta = 0.214$) and Professional/Social Role/Identity ($\beta = 0.233$). The implication is that it is these three specific determinants of motivation that contribute to higher PFA trainer self-efficacy.

Conclusions and Discussion

The objectives of the present study were, first, to evaluate the determinants of PFA training implementation behavior in Chile and, second, to contribute theoretical and practical information to the discussion on the factors that influence self-efficacy in implementation behavior.

In this sense, the results of the study indicate that personal facilitators are associated with the intrinsic motivation of PFA trainers, as well as their knowledge and training to implement the innovation, being in these domains where people obtained the highest scores.

As for the barriers, the lowest scores appear in the opportunities, specifically in the socio-political context and innovation strategies, which would be associated with the perception of resource allocation and the organizational and governmental structure that supports the intervention. This is a concern for all stakeholders because if trainers do not have the materials, training, supervision, and follow-up needed to sustain the program, they could increase the risks faced by PFA implementers and their beneficiaries during disaster and emergency situations (Monsley et al., 2008).

Kok et al. (2016) consider that overcoming these barriers is possible by working at all levels through the following actions: (a) in order to improve the allocation of resources, it is possible to work on the combination of the frequency and visibility of interventions and their results, so that politicians have social incentives to create new legal frameworks that reduce institutional barriers; (b) in the same line, it is necessary for those responsible for strengthening the current social and community networks to also create new partnerships with private organizations in order to provide implementers with resources with greater responsiveness; and (c) as for improving supervision and monitoring, it seems necessary to generate structural changes in the institutions directly involved in implementation, in order to create an

Table 4 Results of multiple linear regression analysis of COM-B over self-efficacy^a

| | B | Dev. Error | β | t | Sig. | R | R ² | ΔR^2 | F | Sig. |
|-----------------------------------|--------|------------|---------|--------|----------|-------|----------------|--------------|--------|----------|
| Regression | | | | | | 0.572 | 0.327 | 0.306 | 15.390 | 0.000*** |
| (Constant) | 5.327 | 11.725 | | -0.454 | 0.651 | | | | | |
| Capacities | -2.466 | 5.082 | -0.073 | -0.485 | 0.629 | | | | | |
| Motivation | 21.361 | 5.405 | 0.616 | 3.952 | 0.000*** | | | | | |
| Opportunity | 0.661 | 3.403 | 0.022 | 0.194 | 0.846 | | | | | |
| Regression | | | | | | 0.589 | 0.347 | 0.326 | 16.824 | 0.000*** |
| (Constant) | -5.168 | 13.134 | | -0.393 | 0.695 | | | | | |
| Beliefs about consequences | 10.852 | 3.274 | 0.323 | 3.314 | 0.001*** | | | | | |
| Negative emotions | 6.049 | 2.399 | 0.214 | 2.522 | 0.013* | | | | | |
| Professional/Social Role/Identity | 4.245 | 1.685 | 0.233 | 2.520 | 0.013* | | | | | |

^adependent variable: self-efficacy

* $p > 0.05$

** $p > 0.01$

*** $p > 0.001$

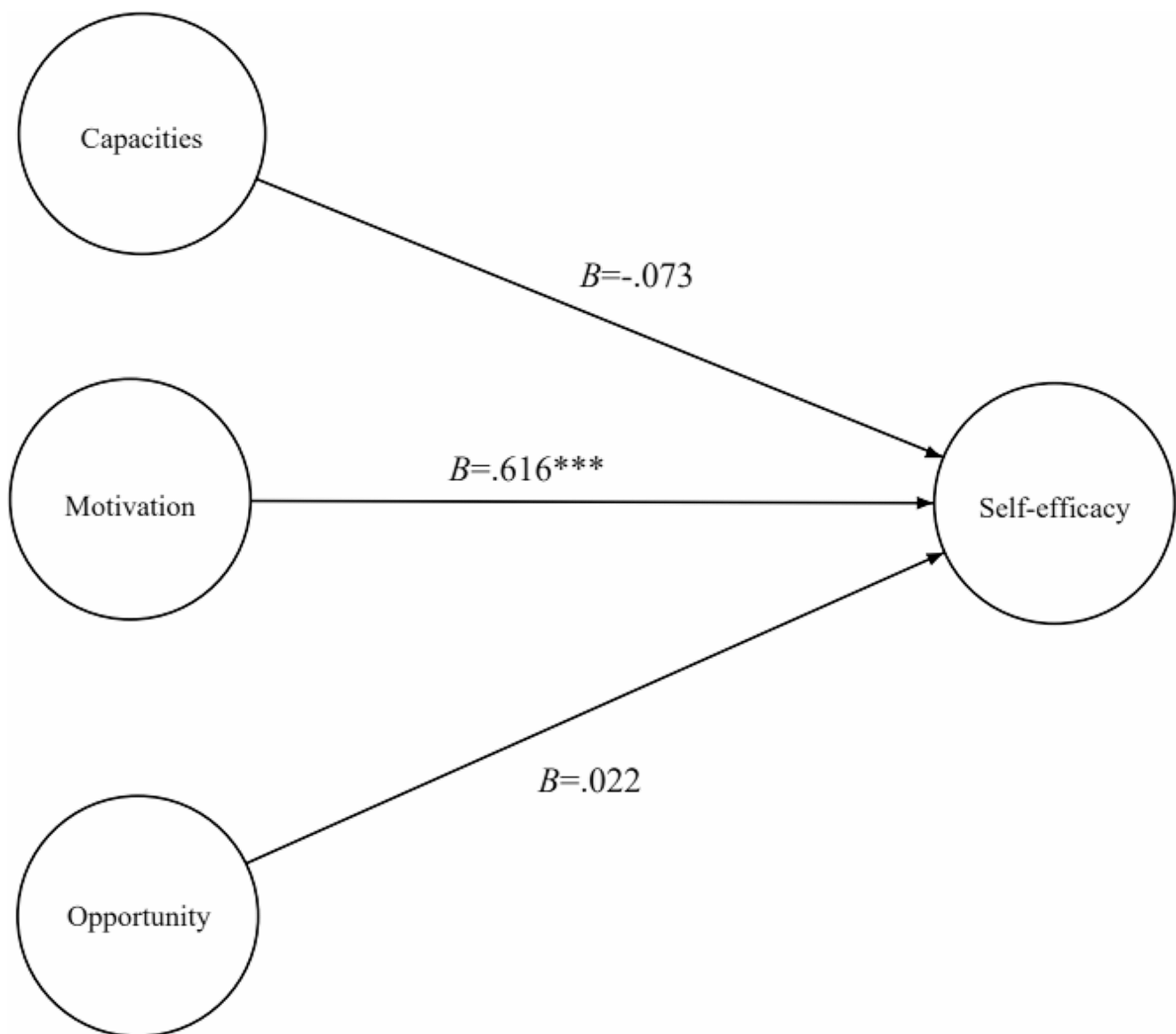


Fig. 1 Model 1 regression of COM-B dimensions on self-efficacy. Note: * $p > 0.05$; ** $p > 0.01$ *** $p > 0.001$

organizational climate whose values are aligned with those promoted by innovation.

On the other hand, self-efficacy among PFA trainers was found to be mainly determined by factors related to their intrinsic motivation, in particular beliefs about the consequences of their actions, their professional identity, and the management of negative emotions. These findings complement the results of other studies, which point to personal skills, prior training or contextual resources as main influences on self-efficacy (Kerns et al., 2016; Shapiro & Charest, 2020; Shapiro et al., 2021).

According to Shapiro and Charest (2020), since self-efficacy is related to the training and skills of the implementers, it could also be influenced by the variables of the organizational environment of the institutions that provide this

training. However, this does not seem to be the case in the sample of trainers studied, who, among the scarce opportunities offered by the environment, found barriers mainly related to the resources allocated by their institutions.

These discrepancies could be explained by a systematic disconnection of the institutions promoting these interventions over time, which do not allocate sufficient human and material resources to meet the requirements of the guidelines, a phenomenon that has been recorded in the implementation of public policies throughout Latin America (Agudelo-Hernández & Rojas-Andrade, 2021). Given the limited opportunities offered by the context to PFA trainers, they could be committing more psychological resources to carry out the implementation and overcome the barriers they face, concentrating the perception of their chances of

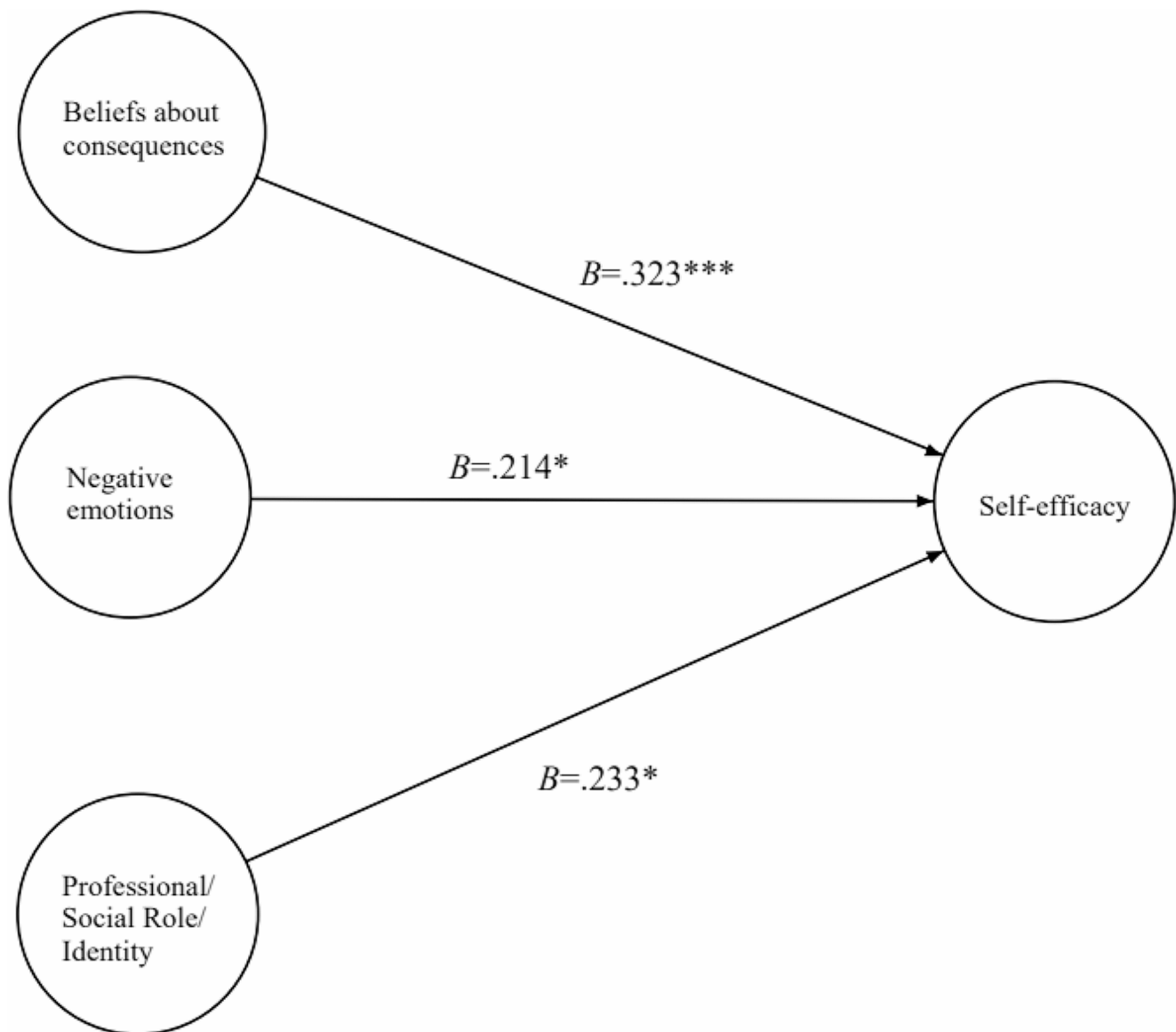


Fig. 2 Model 2 regression of TDF domains on self-efficacy. Note: * $p > 0.05$; ** $p > 0.01$ *** $p > 0.001$

success on their own personal and professional identity, on the belief that their actions can mean change for other people, and on their ability to manage negative emotions in emergency and disaster situations.

This coincides with the low level of optimism and confidence in the organizational and socio-political context observed as the age of the individuals increases, who, living longer with the limitations of the system in other areas, have a more negative perception of the resources they can obtain from it. As well as with the strong social influence and desire to continue implementing that is observed among individuals with more experience, who are the ones who, despite the limitations, want to continue investing more psychological resources in PFA training.

In this context, in which people seem to carry out interventions through personal resources, while the low level of institutional support seems to be a barrier, it may be important to increase this support in terms of resources, visibility, management support, changes in public policies, as mentioned above. However, these must be accompanied by actions that revalue the individual efforts that people or teams make to successfully implement these innovations. This can be done through public recognition, improvements in working conditions or by addressing specific needs that management can identify in its relationship with the implementers. All of this is aimed at increasing people's self-efficacy, which we know is necessary for successful implementation (Andersen et al., 2021; Kim et al., 2018; Kok et al., 2016; West & Michie, 2020).

Future research could delve into the detail of how processes occurring in the socio-political context and innovation strategies hinder these interventions, with the aim of identifying specific improvement needs within the context. Similarly, it may be necessary to understand what intrinsically motivates these individuals do their work even when they perceive that the organizations in the context do not support them, and that other psychological variables, besides self-efficacy, play an important role in their ability to successfully implement innovation. It is important for the field of implementation science to continue to conduct studies that not only focus on diagnosis, but also on the impact of actions taken to overcome the barriers encountered.

Regarding the limitations of this work, the main one is the length of the instrument used, which could have dissuaded people from participating in the survey. In this sense, to improve the implementation work, measurement mechanisms that are both reliable and sensitive to the needs of the context are required (Agudelo-Hernández & Rojas-Andrade, 2021). More user-friendly assessment devices would allow future research to explore new elements leading to a better understanding about the mechanisms and interactions behind the individual and contextual determinants of implementation behavior.

Similarly, the sample size makes it difficult to generalize these results to other populations. However, it is known that Latin America is in a relatively homogeneous situation in terms of implementation, which can be a starting point for other countries in the region to evaluate the organizational and socio-political context that must support this type of intervention (Agudelo-Hernández & Rojas-Andrade, 2021).

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Declarations

Ethical Approval Not applicable, secondary data obtained in another research process are used.

Conflict of Interest The authors declare that they have no competing interests.

References

- Ager, R., Roahen-Harrison, S., Toriello, P., Kissinger, P., Morse, P., Morse, E., Carney, L., & Rice, J. (2011). Predictors of adopting motivational enhancement therapy. *Research on Social Work Practice, 21*(1), 65–76. <https://doi.org/10.1177/1049731509353170>.
- Agudelo-Hernández, F., & Rojas-Andrade, R. (2021). Ciencias De La Implementación Y Salud Mental: Un Diálogo Urgente. *Revista Colombiana De Psiquiatría*. <https://doi.org/10.1016/j.rcp.2021.08.001>.

- Andersen, B. L., Dorfman, C. S., & Conley, C. C. (2021). Achieving oncology mental health providers' usage of an empirically supported treatment: Lessons learned. *Psycho-Oncology, 30*(5), 794–803. <https://doi.org/10.1002/pon.5699>.
- Ato, M., López-García, J. J., & Benavente, A. (2013). Un Sistema De clasificación De Los diseños de investigación en psicología. *Anales De Psicología/Annals of Psychology, 29*(3), 1038–1059. <https://doi.org/10.6018/analesps.29.3.178511>.
- Barrales-Díaz, C., Marín, H., & Molina, R. (2013). Estado Del arte de la psicología en emergencias y desastres en Chile Y América Latina. *Revista Liminales Escritos Sobre Psicología Y Sociedad, 2*(03), 123–142. <https://doi.org/10.54255/lim.vol2.num03.232>.
- Campbell, B. K., Buti, A., Fussell, H. E., Srikanth, P., McCarty, D., & Guydish, J. R. (2013). Therapist predictors of treatment delivery fidelity in a community-based trial of 12-step facilitation. *The American Journal of Drug and Alcohol Abuse, 39*(5), 304–311. <https://doi.org/10.3109/00952990.2013.799175>.
- Cane, J., O'Connor, D., & Michie, S. (2012). Validation of the theoretical domains framework for use in behaviour change and implementation research. *Implementation Science, 7*(1), 1–17. <https://doi.org/10.1186/1748-5908-7-37>.
- Centre for Research on the Epidemiology of Disasters (CRED) (2022a). *Human cost of disasters. An overview of the last 20 years 2000–2019* <https://cred.be/sites/default/files/CRED-Disaster-Report-Human-Cost2000-2019.pdf>.
- Centre for Research on the Epidemiology of Disasters (CRED) (2022b). *2021 Disasters in numbers* Institute Health and Society – UCLouvain. https://cred.be/sites/default/files/2021_EMDAT_report.pdf.
- Clemson, L., Laver, K., Rahja, M., Culph, J., Scanlan, J. N., Day, S., & Gitlin, L. N. (2021). Implementing a reablement intervention, care of people with dementia in their environments (COPE): A hybrid implementation-effectiveness study. *The Gerontologist, 61*(6), 965–976. <https://doi.org/10.1093/geron/naa105>.
- Codding, R. S., & Lane, K. L. (2015). A spotlight on treatment intensity: An important and often overlooked component of intervention Inquiry. *Journal of Behavioral Education, 24*(1), 1–10. <https://doi.org/10.1007/s10864-014-9210-z>.
- De Reyes Ponce, T. A. (2018). *Somos Resilientes Herramientas De información para Primera Ayuda Psicológica*. Pontificia Universidad Católica de Chile.
- Esterwood, E., & Saeed, S. A. (2020). Past epidemics, natural disasters, COVID19, and mental health: Learning from history as we deal with the present and prepare for the future. *Psychiatric Quarterly, 91*(4), 1121–1133. <https://doi.org/10.1007/s1126-020-09808-4>.
- Everly, G. S., Lee McCabe, O., Semon, N. L., Thompson, C. B., & Links, J. M. (2014). The development of a model of Psychological First Aid for non-Mental Health trained Public Health personnel. *Journal of Public Health Management and Practice, 20*(5), 24–29. <https://doi.org/10.1097/PHH.0000000000000065>.
- Frank, H. E., Becker-Haimes, E. M., & Kendall, P. C. (2020). Therapist training in evidence-based interventions for mental health: A systematic review of training approaches and outcomes. *Clinical Psychology: Science and Practice, 27*(3). <https://doi.org/10.1111/cpsp.12330>.
- Horn, R., O'May, F., Esliker, R., Gwaikolo, W., Woensdregt, L., Ruttenberg, L., & Ager, A. (2019). The myth of the 1-day training: The effectiveness of psychosocial support capacity-building during the Ebola outbreak in West Africa. *Global Mental Health, 6*. <https://doi.org/10.1017/gmh.2019.2>.
- Huijg, J. M., Gebhardt, W. A., Dusseldorp, E., Verheijden, M. W., van der Zouwe, N., Middelkoop, B. J., & Crone, M. R. (2014). Measuring determinants of implementation behavior: Psychometric properties of a questionnaire based on the theoretical domains framework. *Implementation Science, 9*(1), 1–15. <https://doi.org/10.1186/1748-5908-9-33>.

- Kerns, S. E. U., Cevasco, M., Comtois, K. A., Dorsey, S., King, K., McMahon, R., Sedlar, G., Lee, T. G., Mazza, J. J., Lengua, L., Davis, C., Evans-Campbell, T., & Trupin, E. W. (2016). An interdisciplinary university-based initiative for graduate training in evidence-based treatments for children's mental health. *Journal of Emotional & Behavioral Disorders*, 24(1), 3–15. <https://doi.org/10.1177/1063426615583457>.
- Kim, J. J., Brookman-Frazer, L., Gellatly, R., Stadnick, N., Barnett, M. L., & Lau, A. S. (2018). Predictors of burnout among community therapists in the sustainment phase of a system-driven implementation of multiple evidence-based practices in children's mental health. *Professional Psychology: Research and Practice*, 49(2), 132. <https://doi.org/10.1037/pro0000182>.
- Kok, G., Gottlieb, N. H., Peters, G. J. Y., Mullen, P. D., Parcel, G. S., Ruiters, R. A., & Bartholomew, L. K. (2016). A taxonomy of behaviour change methods: An intervention mapping approach. *Health Psychology Review*, 10(3), 297–312. <https://doi.org/10.1080/17437199.2015.1077155>.
- Kutner, B. A., Wu, Y., Balán, I. C., & Meyers, K. (2020). Talking about it publicly made me feel both curious and embarrassed: Acceptability, feasibility, and appropriateness of a stigma-mitigation training to increase health worker comfort discussing anal sexuality in HIV services. *AIDS and Behavior*, 24(6), 1951–1965. <https://doi.org/10.1007/s10461-019-02758-4>.
- Makwana, N. (2019). Disaster and its impact on mental health: A narrative review. *Journal of Family Medicine and Primary Care*, 8(10), 3090. https://doi.org/10.4103/jfmprc.jfmprc_893_19.
- MINSAL. (2021). *Plan De Acción De Salud Mental 2019–2025*. Santiago.
- MINSAL, ONEMI, OPS & UNICEF. (2018). *Manual de Implementación de talleres de Capacitación en Primera Ayuda Psicológica (PAP) para respondedores*. Santiago.
- MINSAL, OPS, WHO, & UNICEF. (2018). *Manual de Implementación de talleres de Formación de facilitadores de capacitación en Primera Ayuda Psicológica*. Santiago.
- Montenegro, P. C., & Cabello, R. F. (2018). *Manual ABCDE para la aplicación de Primeros Auxilios Psicológicos En crisis individuales y colectivas*. Universidad Católica de Chile.
- Mosley, A. M., McCabe, O. L., Everly Jr, G. S., Gwon, H. S., Kaminisky, M. J., Links, J. M., & Lating, J. M. (2008). The tower of ivory meets the house of worship: psychological first aid training for the faith community. *International Journal of Emergency Mental Health*, 9(3), 171–180. <https://europepmc.org/article/med/18372659>.
- North, C. S., & Pfefferbaum, B. (2013). Mental health response to community disasters: A systematic review. *Jama*, 310(5), 507–518. <https://doi.org/10.1001/jama.2013.107799>.
- Okuyan, B., Bektay, M. Y., Kingir, Z. B., Save, D., & Sancar, M. (2021). Community pharmacy cognitive services during the COVID-19 pandemic: A descriptive study of practices, precautions taken, perceived enablers and barriers and burnout. *International Journal of Clinical Practice*, 75(12), e14834. <https://doi.org/10.1111/ijcp.14834>.
- ONEMI. (2020). *Política Nacional Para La Reducción Del Riesgo De Desastres. Plan Estratégico Nacional 2020–2030*. ONEMI, Ministerio del Interior y Seguridad Pública. Gobierno de Chile.
- Organización Mundial de la Salud (OMS) (2012). *Primera ayuda psicológica: Guía para trabajadores de campo*. <https://apps.who.int/iris/handle/10665/44837>.
- Ris, I., Schröder, K., Kongsted, A., Abbott, A., Nilsen, P., Hartvigsen, J., & Öberg, B. (2021). Adapting the determinants of implementation behavior questionnaire to evaluate implementation of a structured low back pain programme using mixed-methods. *Health Science Reports*, 4(2), e266. <https://doi.org/10.1002/hsr2.266>.
- Schröder, K., Öberg, B., Enthoven, P., Kongsted, A., & Abbott, A. (2020). Confidence, attitudes, beliefs and determinants of implementation behaviours among physiotherapists towards clinical management of low back pain before and after implementation of the BetterBack model of care. *BMC Health Services Research*, 20(1), 1–14. <https://doi.org/10.1186/s12913-020-05197-3>.
- Shapiro, C. J., & Charest, E. (2020). Factors associated with provider self-efficacy in delivery of evidence-based programs for children, youth, and families. *Child & Family Social Work*, 25(3), 637–647. <https://doi.org/10.1111/cfs.12738>.
- Shapiro, C. J., Watson MacDonell, K., & Moran, M. (2021). Provider self-efficacy in delivering evidence-based psychosocial interventions: A scoping review. *Implementation Research and Practice*, 2, 2633489520988258. <https://doi.org/10.1177/2633489520988258>.
- Terpstra, J. A., van der Vaart, R., Spillekom-van Koullil, S., van Dam, A., Rosmalen, J. G., Knoop, H., & Evers, A. W. (2018). Becoming an eCoach: Training therapists in online cognitive-behavioral therapy for chronic pain. *Patient Education and Counseling*, 101(9), 1702–1707. <https://doi.org/10.1016/j.pec.2018.03.029>.
- United Nations Office for Disaster Risk Reduction (UNDRR) (2019). *Global Assessment report on disaster risk reduction UNDRR*. <https://www.undrr.org/publication/global-assessment-report-disaster-risk-reduction-2019>.
- Wang, L., Norman, I., Xiao, T., Li, Y., & Leamy, M. (2021). Psychological first aid training: A scoping review of its application, outcomes and implementation. *International Journal of Environmental Research and Public Health*, 18(9), 4594. <https://doi.org/10.3390/ijerph18094594>.
- West, R., & Michie, S. (2020). A brief introduction to the COM-B model of behaviour and the PRIME theory of motivation. *Qeios*. <https://doi.org/10.32388/www04e6>.
- Zaffar, M. A., Iqbal, M. F., & Rameez, M. (2018). Prevalence of substance abuse screening of adults by pediatricians. *Asian Journal of Multidisciplinary Studies*, 6, 2. www.ajms.co.in:article/2940.

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