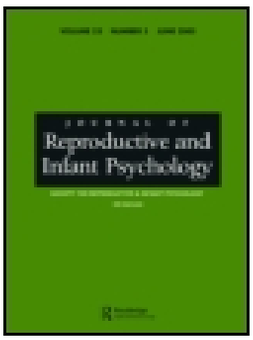

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Cultural adaptation of an intervention to prevent postnatal depression and anxiety in Chilean new mothers

Soledad Coo[a], María Ignacia García[a], Natalia Awad[a], Heather Rowe[b] and Jane Fisher[b]

[a]Facultad de Psicología, Universidad del Desarrollo, Santiago, Chile; [b]School of Public Health and Preventive Medicine, Monash University, Melbourne, Australia

ABSTRACT

Objective: The aim of this study was to culturally adapt What Were We Thinking (WWWT), an Australian psychoeducational intervention to prevent symptoms of depression and anxiety among first-time mothers, to be used in the Chilean primary health system.

Background: Mental health symptoms are common in first-time mothers. Despite the availability of effective screening and referral in the Chilean primary health system, very few women access treatment due to diverse barriers. This highlights the importance of using a preventive approach. The evidence that culturally-adapted, evidence-based preventive programmes can reduce maternal mental health problems supports the development of this study.

Methods: WWWT materials were translated into Spanish. Cultural Adaptation and field testing were conducted following the Cultural Adaptation Model.

Results: Modifications to the intervention included adding an explicit infant mental health approach, a simplification of written information, and changes in the number and duration of the sessions. The adapted version of WWWT was considered understandable and relevant for local perinatal mental health specialists, new mothers and their partners.

Conclusion: The Spanish version of WWWTis a culturally sensitive intervention, its potential for effective use in the Chilean context warrants further investigation. Limitations and implications for future studies are discussed.

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Postnatal depression; mother/s; intervention

Introduction

Perinatal mental health problems, especially symptoms of depression and anxiety, are common during childbearing and are one of the most frequent and serious complications during the transition to motherhood, affecting 10–15% of women in industrialised countries and approximately 20% of women in developing countries (Gelaye, Rondon, Araya, & Williams, 2016; Howard et al., 2014; Woody, Ferrari, Siskind, Whiteford, & Harris, 2017). Anxiety has a broad range of presentations and its prevalence rates vary, ranging from 0.3% to 7.4% during the first three months after childbirth (Fairbrother, Janssen, Antony, Tucker,

CONTACT Soledad Coo scoo@udd.cl

& Young, 2016). As for comorbid depression and anxiety disorders, these affect 13.1% of women during the first eight weeks postpartum (Falah-Hassani, Shiri, & Dennis, 2016).

In Chile, 10.2% of new mothers meet diagnostic criteria for postnatal depression (Jadresic, Nguyen, & Halbreich, 2007), which is consistent with international studies. This prevalence increases to 40.5% when combined symptoms of postnatal depression and anxiety are considered (Jadresic, 2010).

Left untreated, maternal mental health problems have negative consequences for mothers, infants and their families. Postnatal depression has been associated with reduced sensitivity and responsiveness to infant cues and lower caregiving capability, adversely affecting child development (O'Higgins, Roberts, Glover, & Taylor, 2013; Pawluski, Lonstein, & Fleming, 2017). This problem becomes more serious in situations of social adversity, increasing the risk of developing mental health symptoms during the transition to motherhood (Fisher et al., 2012).

Despite the availability of effective interventions, only a minority of new mothers who are identified as being at risk for presenting mental health problems access treatment (Goodman & Tyer-Viola, 2010). Preventive interventions could be an alternative strategy to promote maternal emotional wellbeing in the perinatal period.

Recent reviews support the effectiveness of preventive, evidence-based, psychoeducational programmes targeting perinatal mothers (Chowdhary & Psychiatrist, 2014); especially if they are partner-inclusive (Pilkington, Milne, Cairns, Lewis, & Whelan, 2015). Further evidence suggests that these interventions can be culturally adapted to be used in settings that differ from those for which they were originally developed (Fisher et al., 2014; Rahman et al., 2013).

One of the interventions that has been shown to be effective in preventing postnatal depression and anxiety is 'What Were We Thinking' (Fisher, Wynter, & Rowe, 2010). WWWT is a gender-informed, psychoeducational intervention for first-time mothers, their partners and infants that addresses relevant and potentially modifiable risk factors for postnatal depression and anxiety. To our knowledge, there are no preventive interventions targeting new mothers in the Chilean primary health system. The purpose of this study is to culturally adapt WWWT to be delivered in this context.

Perinatal mental health and health services in Chile

The national prevalence of postnatal depression in Chile is consistent with international evidence; however, Chilean new mothers from disadvantaged backgrounds have a higher risk of presenting symptoms of depression in the postpartum period (Mendoza & Saldivia, 2015). Although Chile has the second lowest index-rate of poverty in Latin America and has been considered by the World Bank as a high-income country since 2013 (Mc Donnell & Malhotra, 2018) it has high rates of income inequalities with 16.1% of the population living below the poverty line (de Mello & Mulder, 2005). Thus, the prevalence of perinatal mental health problems in Chilean mothers varies according to their social circumstances (Mendoza & Saldivia, 2015). Approximately 75% of the population access health assistance through the public health system.

Due to the negative consequences of poor maternal mental health, the Chilean Department of Health has issued guidelines for the early detection and treatment of depression during pregnancy and the postpartum period. Universal screening conducted

by midwives and nurses using the Edinburgh Postnatal Depression Scale reaches 89% of pregnant women in the public system (Rojas, 2013; Rojas & Pemjean, 2009). Screening practices in the private health system are not compulsory and vary between health practitioners. Women who seek healthcare in the public system who are identified as being at risk are referred to a mental health professional (i.e. a psychiatrist and/or psychologist) for assessment and treatment, which is universally available at no cost via a specific health programme. However, only 22.4% percent of the women who are referred to mental health services access treatment. Furthermore, the women who receive treatment only attend approximately 2 sessions with a mental health professional (Rojas, 2013).

The low treatment adherence has been related to insufficient knowledge about mental health problems, such as the belief that depression can be overcome by will, and a negative perception of the available treatments for PND, especially the use of medication. Some characteristics of the Chilean primary health system, including insufficient coordination between health professionals and long waiting periods to access treatment contribute to this phenomenon (Rojas et al., 2015). In this context, preventive strategies could make a significant contribution to services to support new mothers´ emotional wellbeing.

What Were We Thinking (WWWT)

WWWT is a psychoeducation, gender-informed intervention for primary postnatal health care to prevent depression and anxiety in first-time mothers, developed in Australia. It addresses relevant, potentially modifiable risk factors for developing mental health problems such as poor-quality partner relationship and unsettled infant behaviour. The intervention is based on the notion that day-to-day interactions contribute to the risk for developing mental health problems in new mothers; thus, it offers practical, caregiving skills to reduce unsettled infant behaviour and to promote couples' interpersonal skills.

WWWT is delivered by a trained nurse-facilitator in a single 6-hour session to maximise attendance and is oriented to couples and their infants of 6–8 weeks of age. The WWWT session is structured in two sections: About Babies and About Parents. About Babies addresses infant temperament, crying, sleep needs, daily care routines, and settling strategies. About Parents refers to the changed needs associated with parenthood in both mothers and fathers and includes the naming and renegotiating of the unpaid workload, and identifying experiences with the couple's families of origin and sources of and gaps in support (Fisher et al., 2010). WWWT materials include a Facilitator´s Guide, a booklet with the main WWWT contents for the parents, and working sheets to be used during the session.

Fisher et al. (2016) explored the effectiveness of WWWT among new parents in Australia with a cluster randomised controlled trial and found that participating in the intervention was associated with a reduced prevalence of symptoms of depression and anxiety at six and 26 weeks after childbirth compared to a group who received care-as-usual (OR = 0.36, 95% CI 0.14 to 0.9589).

WWWT is an effective intervention that could complement the current screening and treatment initiatives universally available for new mothers in Chile. However, the programme must be culturally adapted to meet the needs of Chilean new mothers and fathers. Cultural adaptation refers to the modification of an intervention protocol to make it congruent with

a different group´s cultural patterns and values (Bernal & Adames, 2017). This process may include changes to the intervention content and mode of delivery (Whaley & Davis, 2007).

The aim of this study was to culturally adapt WWWT for the Chilean context following the Cultural Adaptation Model (Domenech-Rodriguez & Wieling, 2004; Rogers, 1995) and to explore the acceptability and relevance of the intervention for potential participants and facilitators.

Method

The Cultural Adaptation Model (Rogers, 1995) informed the adaptation process and the Ecological Validity Model (EVM; Bernal, Jiménez-Chafey, & Domenech Rodríguez, 2009) guided the modification of the intervention content, as suggested by earlier studies (Baumann et al., 2015; Ferrer-Wreder, Sundell, & Mansoory, 2012).

The CAP model outlines three phases, which involve specific tasks and individuals. Phase One describes the collaboration between the intervention developer, the cultural adaptation specialist (CAS, the first author), and the community. From the CAS perspective the target community works collaboratively to explore needs and interests, which will inform the adaptation process.

Phase Two focuses on the adaptation of the intervention with the collaboration of community members, who form a panel of reviewers along with specialist in the intervention field. Evaluation measures are also selected. Finally, Phase Three outlines the integration of the observations and feedback obtained in Phase Two into a new version of the original intervention, and field testing of the adapted programme. In this phase, the EVM (Bernal & Adames, 2017) is recommended as a guide to the modification of content by identifying eight domains that may be adapted. These include language, persons, metaphors, content, concepts, goals, context, and methods (See Table 1). A process of decentring may take place, which involves modifying some aspects of the original intervention and including new contents that are relevant for the target group (Domenech-Rodriguez & Wieling, 2004).

Data analysis

During Phase Two, the feedback provided by the panel of reviewers regarding the relevance, comprehensibility, and acceptability of WWWT was the primary outcome of interest. The reviewers´ observations and comments were systematised according to the EVM (Bernal & Adames, 2017) to inform the modification of the WWWT materials. Data obtained from the field-testing of WWWT were the main outcome in Phase Three.

Results

Phase One

A formal collaboration agreement was established between the institutions of the intervention developers and the CAS. The CAS reviewed current literature on perinatal mental health and preventive interventions and met with relevant stakeholders, including professionals from the Chilean´s Infancy Nacional Policy (i.e. Chile Crece Contigo, ChCC) and

Table 1. Ecological Validity Model (EVM).

Dimension	Leading questions
Language	Is the language used in the intervention understandable and culturally appropriate?
Persons	This category refers to the participant-facilitator relationship. Are clients comfortable with the participant-facilitator relationship? Are participants and facilitators similar in terms of ethnicity?
Metaphors	Are popular sayings or cultural symbols included in the intervention manual or the treatment environment?
Content	Does the intervention materials use examples that reflect common cultural values?
Concepts	Are treatment concepts delivered in a way that is consistent with cultural values? Does the participant understand the problem and the reason for the treatment? Does the participant agree with the definition of the problem and the treatment?
Goals	Are the intervention goals framed within relevant cultural values? Are these goals consistent with the cultural expectations of treatment?
Method	Are the intervention methods consistent with cultural values? Does the participant agree with the methods of treatment?
Context	Does the intervention consider contextual issues and barriers for treatment? Do participants see the facilitator as caring about their social situation?

the public health system. The information gathered from these sources supported the relevance of culturally adapting WWWT.

Phase Two

An adaptation group led by the CAS was formed including researchers with relevant training in mental health and developmental psychology. The researchers were native Spanish speakers and fluent English speakers. The English language version of WWWT materials was made available to the adaptation group to develop a first translated version of the WWWT materials (i.e. facilitator´s manual, participant´s booklet and worksheets) into Spanish.

The WWWT booklet and work sheets were translated by one of the researchers and a professional translator provided the initial Spanish version of the WWWT facilitator`s manual. Members of the adaptation group revised these preliminary translations; attention was given to accuracy of language and meaning and to identifying local expressions and terms for specific contents.

A panel of reviewers was formed with twelve relevant stakeholders. They included mental health specialists with experience in perinatal mental health, primary health care professionals, and new parents. The stakeholders represented academics and practitioners expert in the field, as well as potential facilitators and participants of the intervention. The members of this group revised the WWWT participant´s materials (i.e. booklet and worksheets) in terms of the relevance of the contents, semantic validity, and adequacy of the language and images. They also commented on the intervention mode of delivery (i.e. single, group session in a primary health setting). Mental health specialists and primary health care professionals participating in this group gave additional feedback about the facilitator´s manual. They suggested to include scripts introducing the activities in every section and to add an explicit focus on infant mental health. This was particularly relevant for the materials describing how to sooth the baby and how to structure a daily routine. Most of the comments were complementary and consistent, but on the few occasions when contradictory opinions were given, they were discussed by the members of the adaptation group to

reach consensus. As suggested by the CAP model, evaluation measures that could be used by local services offering the WWWT intervention were identified. These instruments include the Edinburg Postnatal Depression Scale (Cox, Holden, & Sagovsky, 1987; Jadresic, Araya, & Jara, 1995), the Patient Health Questionnaire (PHQ-9; Baader et al., 2012) and the Depression, Anxiety and Stress Scale (DASS; Antúnez & Vinet, 2012; Lovibond & Lovibond, 1995), These three instruments have been validated in Chile; the EPDS and the PHQ-9 are routinely used in the Chilean primary health system.

Phase Three

Intervention modification

Table 2 shows the modifications to the WWWT content, according to the eight dimensions described by the EVM (Bernal & Adames, 2017).

The reviewers considered the images appropriate for the local circumstances; yet, they suggested modifications for the participant´s booklet and facilitator´s manual covers to convey a more positive image of the transition to parenthood than the original covers. With the same purpose, the intervention was renamed as 'And now what?' (i.e. '¿Y ahora qué?' in Spanish). The intervention training structure was considered appropriate due to its similarity with professional development activities available in Chile for professionals in the primary health system.

Field testing

Setting

The field testing of the Spanish version of WWWT was conducted at a primary health centre in Santiago, Chile.

Participants and procedure

The nurses at the health centre helped the researchers to identify the women who had given birth to their first infant in the previous 6 to 8 weeks. Adult women (>18 years of age) who were fluent in Spanish and had delivered a healthy, full-term baby were invited to participate in WWWT groups by members of the research team. All the participants provided written consent before joining the study. The WWWT groups were facilitated by members of the research team who were familiar with the intervention. The sessions took place in the facilities of the primary health service in two consecutive weekdays during regular working hours (i.e. 8.00 to 17.00). After each session, the participants completed an anonymous survey including study-specific questions using a 5-point Likert scale to assess the comprehensibility, relevance, and acceptability of each session, as well as an open-ended question addressing their experience during the intervention and suggestions for amendments.

Results

Ten adult (>18 years of age) new mothers participated in three WWWT groups, each of two 2-hour sessions. The mothers were accompanied by their babies and partners ($N = 3$) or a significant support person ($N = 3$), four mothers attended the sessions only with their

Table 2. Modification of the WWWT content according to the EVM.

Dimension	Content modification
Language	Written contents in the participants´ booklet and worksheets were reduced and simplified to make them appropriate for participants with low-literacy. Some specific terms were replaced by local equivalent terms. For instance, maternal-child health nurses and play groups, which are not available in Chile, were translated as 'nurses' and 'group activities for parents and children'. Also, leisure activities for fathers in the original WWWT include playing golf, which is mostly practiced by small, advantaged groups in Chile. This activity was replaced by playing soccer, which is a popular activity across social and economic groups.
Persons	The relevance of building a warm, positive, and encouraging environment to promote group discussion was highlighted in the facilitator´s manual. Explicit guidelines were included in the description of every activity to increase the facilitator´s awareness about the need to have a flexible attitude towards the participants´ experiences, values, and beliefs about parenting to promote a safe context for group discussion. Considering the high rate of single mothers in the cultural context, the facilitator´s manual emphasises the use of language and examples that would make single mothers feel incorporated in the dynamic of the intervention,
Metaphors	Traditional sayings were included in the facilitator's guide to explain how being a parent is different to previous expectations (i.e. 'otra cosa es con guitarra', 'things are different with a guitar in your hands').
Content	An infant mental health perspective, consistent with the Chilean Early Child Development policy (i.e. Chile Crece Contigo), was explicitly included in the intervention materials to promote parental sensibility and responsiveness to infants. This policy actively promotes the father's involvement, which is a core component of WWWT. To respect this aspect, special care was taken to explicitly address both mothers and fathers in the Spanish materials and special remarks about this issue were included in the facilitator ´s manual to promote the inclusion and participation of fathers during the WWWT sessions.
Concepts	The reviewers considered most WWWT core concepts and components acceptable and consistent with Chilean cultural values and with the Chilean Early Child Development policy.
Goals	The intervention goals were phrased in a language consistent with the Chilean Early Child Development policy, without affecting the essential aspects of the original intervention goals. For instance, the father's involvement was seen as leading to being an 'active father'.
Method	The original WWWT mode of delivery in a single 6-hour session, preferably on a Saturday morning, was considered unfeasible in the Chilean primary health context. A two-hour, weekly session structure was suggested.
Context	The recommendation of reminding the participants about the sessions via telephone or SMS was included in the facilitator´s manual. The original WWWT invites mothers to bring their babies to the sessions, this recommendation was maintained in the Spanish intervention to promote treatment adherence, although the sessions are shorter than in the original WWWT (i.e. two hours instead of six).

babies. All the participants attended the two intervention sessions. All the the mothers were Chilean and were on average 31.1 years of age. Five mothers were married or were in a de facto relationship, the remaining mothers were in a relationship with their infant´s father but did not share a household with them. Four women had a university or technical degree and 6 women had not undertaken tertiary studies after completing high school.

The participants considered the intervention contents to be highly relevant, useful and comprehensible. The women and their partners or support person were engaged in the activities and considered the language, illustrations and intervention material appropriate. The participants reported that discussing skills about infant was helpful and reduced their caregiving-related stress. Strategies to reduce interpersonal conflict and positively handle the changes associated with the transition to parenthood were also seen as relevant and useful for mothers and their partners. Women who attended the sessions without their partners shared their intentions to discuss and use the work material with their partners at home.

No negative feedback about the intervention was provided. However, the mothers suggested that the intervention should take place on Friday evenings or weekends to promote their partners´ participation.

Discussion

The Spanish version of WWWT appears to be a valid and acceptable intervention that could benefit Chilean new mothers, their partners, and infants. Researchers working from a cultural perspective criticise the global validity of psychological models and caution against imposing assumptions and values of a specific culture onto other groups by using interventions without awareness of cultural variables (Bernal & Adames, 2017). This study supports the importance of adapting evidence-based interventions using cultural adaptation frameworks, as has been previously suggested (Domenech-Rodriguez & Wieling, 2004)

The three most significant modifications to the original WWWT intervention were the addition of an explicit infant mental health approach, a simplification and reduction of written information on the participant's materials, and changes to the implementation (i.e. two 2-hour sessions instead of a single session).

Regarding the first point, the Chilean Early Child Development policy (ChCC) frames its activities within an infant mental health perspective and promotes parental sensitivity and responsiveness towards infants and children. Although most WWWT core contents are consistent with Chilean cultural values and with ChCC, an explicit infant mental health focus was needed to make the intervention consistent with the national public policy. This involved adding suggestions for parents to try to understand how their baby is feeling and what he or she may need in specific situations.

Second was simplification of written language. A high proportion of Chilean primary health care users has medium to low literacy levels (Ministerio de Educación, 2011). For this population, encountering materials with extensive written content may be intimidating and could diminish their motivation to participate in the intervention. Last, the original implementation recommendation (i.e. one 6-hour session on Saturdays) was considered unfeasible, because most primary health care centres in Chile do not operate on weekends. Having multiple sessions put treatment adherence at risk, yet this mode of intervention delivery is consistent with other services for new mothers available in the country.

These modifications are culturally relevant; however, a question remains about the fidelity to the original intervention. A high degree of fidelity to an original intervention is achieved when the modifications do not disturb its core components (Barrera, Berkel, & Castro, 2017). Bernal and Adames (2017) suggest that interventions have three major components, namely the propositional model or theory of change, the procedural model involving the steps and procedures that promote change, and the philosophical assumptions (i.e. epistemology and worldview underlying the intervention). Although changes in the procedural component are not problematic, modifications to the other two components alter the intervention significantly and cause inconsistency between the adapted intervention and its original version (Bernal & Adames, 2017)

The Spanish version of WWWT includes procedural (i.e. implementation) changes; however, it does not challenge the original intervention´s core components. These include a focus on the change mechanism of addressing modifiable risk factors for developing mental health problems (i.e. the partner relationship and unsettled infant behaviour) and acknowledging the contribution of daily interactions to the risk for developing mental health problems in new mothers. Maintaining these core components

guarantees a high fidelity to the original, English version of WWWT. The procedural changes suggested facilitate the fulfilment of the WWWT objectives in the Chilean context, while respecting the theoretical foundations of the intervention. Future studies assessing the feasibility and effectiveness of the Spanish version of WWWT should approach the training of facilitators as a key mechanism to promote the intervention fidelity and could develop mechanisms to assess it during the implementation of WWWT groups.

The findings from the field study are limited by the sample´s characteristics. The participants were a small group of Chilean mothers of healthy infants who voluntarily participated in the WWWT groups; most of them had a partner or support person who attended the WWWT sessions with them. These women may not be representative of the general population of mothers who seek healthcare in the public system, which includes women in diverse circumstances and whose motivation to engage in preventive interventions may vary.

The main goal of this study was to adapt WWWT for its use in the general Chilean population who receive medical care from the primary health system; however, this does not consider minority groups who form part of the Chilean society, such as migrants from different cultural backgrounds. Further efforts may be needed to make the intervention culturally sensitive for these groups. Despite this limitation, future studies could assess the feasibility of implementing the available Spanish version of WWWT in the Chilean primary care system and its effectiveness in a Chilean population.

One of the challenges faced in the adaptation and implementation of WWWT was the limited participation of fathers. Despite significant recruitment efforts, only three fathers attended the intervention sessions. This is consistent with previous reports about the limited involvement of fathers in health and health educational activities, even when they are present in the child´s and mothers´ life, due to incompatibility between schedule of activities and work, and sociocultural reasons (Aguayo, Kimelman, & Correa, 2012). Both quantitative and qualitative data show that Chilean fathers are currently more involved in infant care than in the past decades and express their desire to have an active role in their children´s lives. However, they often consider their role as secondary to the mothers´, whom they 'help' in infant care while fulfiling their primary role as providers (Aguayo et al., 2012; Morales, Catalán, & Pérez, 2018). Fathers´ intention to be involved in their children´s lives does not necessarily translate in equally sharing infant care and housework with their partners (Aguayo, Levtov, Barker, Brown, & Barindelli, 2017).

Also, a great majority of Chilean children (71.9%) is born to unmarried mothers (INE, 2019). Almost half of these children have a non-resident father to whom the mother of the child may or may not be romantically involved (Dois, Uribe, Villarroel, & Contreras, 2012). Studies on non-resident fathers show that they tend to be less involved in child rearing than resident fathers (Roy & Smith, 2013), this may also apply to participation in parent education activities in the postpartum period.

The mothers in the field-testing study argued that their partners participation in the sessions was made difficult by the time and schedule of the activity. Unfortunately, this couldn´t be modified due to the health centre regulations that prevented delivery of the interventions during the weekend. Future studies on the effectiveness of the adapted version of WWWT should consider the presence or absence of the fathers´ child in the intervention and the mother's life, as well as the role that support people other than the

partner could play in Chilean mothers´ lives and mental health during the transition to parenthood.

Conclusion

Improving the quality of care for new mothers is fundamental for maternal wellbeing and for positive infant development. The barriers that restrict treatment access and the poor treatment adherence observed in new mothers highlight the need to use a preventive approach in the primary health system. The Spanish version of WWWT is a culturally sensitive intervention, its potential for effective use in the Chilean context warrants further investigation. Future studies exploring the effectiveness of the intervention may need to use diverse strategies to promote the participation of fathers.

Disclosure statement

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