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Screening for postpartum depression in a private health care network in Chile

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Abstract

Background. It has been demonstrated that postpartum depression (PPD) has an impact on infant development with repercussions in the child's cognitive, socioemotional and conduct regulation. Screening for this disorder with the Edinburgh Postnatal Depression Scale (EPDS) has been recommended because this significantly identifies more cases of PPD than usual clinical evaluation.
Aim. To evaluate the use of the EPDS to screen mothers attending well child care visits with their infants during the first 6 months of age and identifying the factors associated with its use in the largest private health care network in Chile.
Methods. Cross-sectional study, conducted by random sampling of the children's medical charts from a universe of 5700 infants aged 1–6 months that attended the health care network during 2009 and 2011. Estimated sample size: 500 medical charts, assuming a recording frequency of the EPDS of 5% (confidence level of 95% and power of 80%). The descriptive data analysis of the variables was carried out using a uni and multivariate analysis. All values of $P < 0.05$ were considered significant (Software SPSS 17.0).
Results. A total of 1940 visits, belonging to 503 medical charts of infants under 6 months of age were reviewed. The use of the EPDS to screen mothers was recorded in nine medical charts (1.7% of the infant population). The only variable that was significantly associated with the recording of the EPDS was the background of previous depression in the mother ($P < 0.001$).
Conclusion. The record of the use of EPDS on mothers of infants seen in the private health care network is much less than what is recommended.

Keywords: Depression screening, primary care, quality of care, well child care visits.

Introduction

Postpartum depression (PPD) is a heterogeneous collection of depressive symptoms that affect a woman postpartum, the Fourth Edition of The Diagnostic and Statistical Manual of Mental Disorder defines the onset within 4 weeks of delivery. Many studies define the length at a minimum of 3 months to a maximum of 1 year after childbirth and include a range of depressive symptom severity (1).

The literature suggests a prevalence of PPD between 10% and 30% at an international level (2–4) and between 20% and 37% in Chile (5–7). Among the lower socioeconomic levels of the Chilean population, figures reaching up to 50% are reported in screened mothers from 3 to 6 months after delivery (8). Besides being a highly prevalent condition, PPD fulfills other criteria that justifies its screening in Chile such as (9,10): (a) in terms of its impact the effects of PPD include the expected results of symptoms of depression in the mother and the repercussions that these have on the child, affecting the cognitive and socioemotional functioning of the child (11,12), (b) PPD can be treated and the negative impact that this disease has on the development of the child must be counteracted for the best interest of the child. It is especially effective if the treatment takes place in the

initial phases of the sickness (13–15). A major problem with proper and timely treatment is that PPD tends to be under-diagnosed (16,17); (c) there is a screening instrument, Edinburgh Postnatal Depression Scale (EPDS), that significantly detects more cases of PPD than the usual clinical examination (35.4% versus 6.3%) (15). The EPDS is effective in Chile, and using a cutoff point of 9/10 points has proven to have a sensitivity of 100% and a specificity of 80% in detecting mothers with PPD (17,18). The EPDS is also easy and fast to administer and has proven to be well-accepted by mothers and the health care team when it is implemented as a part of the usual services (18). Finally (d) Chile has a health care system that is capable of taking care of the mothers who have a positive screening with explicit health insurance guarantees that provide treatment to women with depression who are 15 years and older. In conclusion, PPD is a disease that in Chile fulfills certain criteria that justify its screening.

Screening for PPD may take place in the obstetric and gynaecologic care. Some experiences in Chile have been published regarding screening mothers in this setting (8). It has also been suggested that primary health care and well child care (WCC) visits are an ideal setting for the screening of PPD since the WCC visits address the dynamic developmental process of the child, a longitudinal relationship with the parent/family/child develops and it may be easier to identify and use community resources for the treatment and referral of the depressed mother (19). The regulations of the Chilean Health Department include the use of the EPDS to screen for PPD in the mother among the list of formal activities for WCC visits, but not in the obstetric or gynaecological settings.

Chile has a complex health care system where public and private entities participate in both health insurance and the provision of health services; public and private insurance systems coexist and overlap. The Ministry of health supervises governmental public health actions—that translate public health care policies—take place in the public health care system, but not in the private system, which is mainly focused on curative care and a highly personalised individual relationship with direct access to specialists (20).

The timing and manner in which screening mothers for PPD happens varies between the population within the public system and those choosing the private system. At the public health care level, the use of the EPDS to screen mothers for PPD is scheduled to be managed at the primary health care centres during regular WCC visits at 2 and 6 months of age, Chilean governmental data show the use of the EPDS to screen over 80% of attending mothers in WCC visits during 2012 in the public health care system. At the private health care level, there are no regulations that govern this early detection strategy and it usually depends on the individual action of each health care professional.

The general objective of this investigation is to evaluate the use of the EPDS to screen mothers at WCC visits and identifying the factors associated with its use in the largest private health care network in Chile. The specific objectives are: (i) to determine with what frequency is the EPDS applied to mothers attending WCC with children younger than 6 months, (ii) to evaluate the factors associated with the use of the EPDS by health care professionals from the private network and (iii) to quantify the percentage of mothers with depressive symptoms referred for an evaluation by a psychiatrist or psychologist.

Our working hypothesis in this study is that there is a low level of use of the EPDS to screen mothers attending WCC visits in the private health care network and this could be associated with certain variables related to the health care professionals, the WCC visit context or infant and mother characteristics.

Methods

Setting

The private health care network of the Pontifical Catholic University of Chile (PUC) is the largest network of private medical care in Chile. It is also a clinical campus where different health care professionals are formed. The network has 11 medical centres, a wide network of clinical laboratories, a hospital and 2 clinics. Nearly 1000 doctors and more than 4000 people work in the aforementioned network.

To study the use of the EPDS to screen mothers attending WCC visits with their infants during the first 6 months of age, a cross-sectional study was conducted by random sampling of children's medical charts from a universe of 5700 infants aged 1–6 months that attended the private health care network of PUC centres between 31 December 2009 and 31 December 2011 with the following selection criteria.

Inclusion

All of the WCC visits of infants 1–5 months and 29 days of age scheduled with a paediatrician, a neonatologist or a family physician, and/or with the specialized residents, independent of whether or not the exam was carried out in a teaching context.

Exclusion

Visits for acute sickness and/or those carried out by a subspecialist (with the exception of neonatologists).

The dependent variable was the record of the result of the EPDS applied to the mother in the infant's medical chart in any of the WCC visits during the first 6 months of age, which was defined as a categorical dichotomous variable. The established independent variables *a priori* were gender, type of professional (resident, specialist doctor or supervised intern), exam context (WCC visit or sickness during a WCC visit), background information on infant diseases and characteristics of the mother (age, number of children and history of previous depression).

Based on the universe of 5700 infants younger than 6 months of age seen in the private health care network of PUC centres during the dates previously mentioned, a pilot test was carried out with 50 medical charts that generated a 4% use of the EPDS. According to this pilot study, the sample size was calculated considering a minimal frequency of the EPDS use at 5% and a confidence level of 95%. Using the PS 3.0.14 program, the size of the sample was calculated considering differences in proportions for the principal variables in the study, with a confidence level of 95% and a power of 80%, resulting in a sample size of 500 infant's medical charts. The data were obtained through the electronic medical chart, these were reviewed and the data collected in an Excel spreadsheet, which was piloted and modified prior to its use.

The descriptive data analysis of the variables was carried out using unbiased estimators and confidence intervals according to variable type. A univariate analysis was used to determine if a general relationship existed between the dependent and independent variables. Using the Bonferroni correction in the case that the variable had more than two categories; and a multivariate analysis with a logistic regression to adjust for possible misleading variables. All values of $P < 0.05$ were considered significant. All of the tests were carried out using the SPSS Software version 17.0.

In order to protect data confidentiality, the information collected was organized in a coded database, omitting names and data

that would make it possible to identify any patients. The project was approved by the Ethics Committee of the Pontifical Catholic University of Chile.

Results

A total of 1940 WCC visits, belonging to 503 infants under 6 months of age, were reviewed. All the medical charts reviewed showed that every child that attended WCC visits were taken by their mothers. The use of the EDPS to screen mothers that attended WCC visits was recorded in nine of the infant's medical charts, which was equivalent to 1.7% of the infant population evaluated. The EPDS was used with one mother twice on different WCC visits.

The frequency with which the EPDS was recorded in the children's medical charts did not reach the minimum use expected and the proportional differences in some of the independent variables did not match the considered assumptions in the sample size calculation. This could result in there not being sufficient power so that some of the independent variables that could be significant do not appear as such (See Table 1).

The only significant variable while regressed alone and collectively was the 'history of previous depression in the mother' ($P < 0.001$) (see Table 2). In every case where the EPDS was used to screen the mother attending a WCC visit the screen results were positive.

Conclusions

This study shows the first data of the use of EPDS for screening mothers attending WCC visits in a Latin-American health care network. An interesting finding is that 100% of the medical charts of infant's attending WCC visits stated that the child was brought by his mother, confirming that these visits are an ideal scenario for PPD screening.

The majority of the EPDS recorded were done in the Centro Médico San Joaquín Centre. This could be due to the fact that this centre is an important teaching facility for undergraduate and postgraduate medical students. And upon evaluating the factors associated with the recording of the use of the EPDS to screen the mothers attending their infant's WCC visit, the only significant variable was the 'history of previous depression in the mother'. One hypothesis could be that mothers are only screened for PPD when they are considered to be more at risk, e.g. with a previous history of depression. Supporting this hypothesis is the finding that all the EPDS registered were positive, possibly indicating that the mothers screened are the ones with a high index of suspicion. Another possible explanation could be that the mother is in fact screened but the result is not recorded in the medical chart, or the recording of the result is omitted when negative. However, the possible lack of power to detect other significant variables related to the frequency of the use of the EPDS should be considered. And the scarce number of EPDS recorded makes it impossible to confidently determine a profile that gives insight into the patient, professional, facility or medical centre variables that can affect the use of this instrument.

Table 1. Summary of the factors associated with the use of the Edinburgh Postnatal Depression Scale (EPDS) with mothers during infant visits

Analysis by examination (n = 1947)	Total number of infants (medical charts)	Number of registered positive EPDS (%)	P value*
Type of health care professional			
Family physician staff	495	6 (1.2)	0.095
Pediatric staff	947	3 (0.3)	
Family physician residents	75	1 (1.3)	
Pediatric residents	430	1 (0.2)	
Examination context			
Health care check-up	1223	8 (0.7)	0.756
Check-up + sickness	724	3 (0.4)	
Gender of health care professional			
Male	387	1 (0.3)	0.704
Female	1560	10 (0.6)	
Private health care network centre			
San Joaquín	917	9 (1.0)	<0.001**
Irarrázabal	353	0 (0.0)	
Lira	36	0 (0.0)	
Marcoleta	633	1 (0.2)	
San Jorge	8	1 (12.5)	

*P value according to Fisher's exact test.

**Statistically significant differences are not identified (in each comparison) with Bonferroni correction.

Table 2. Characterization of the only significant variable associated with the use of the Edinburgh Postnatal Depression Scale (EPDS) with mothers during infant visits

Analysis by medical chart (n = 503)	Total number of infants (medical charts)	Number of registered altered EPDS (%)	P value*
History of previous depression			
Yes	17	4 (23.5)	>0.001
No	486	6 (1.2)	
History of child pathology			
Yes	57	0 (0.0)	0.613
No	446	10 (2.2)	

*P value according to Fisher's exact test.

On the other hand, the record of use of the EPDS to screen mothers attending WCC visits in the private health care network of PUC centres is much less than what is recommended by international findings and Chilean government programs. While the possible explanations for this are varied, as mentioned before a possible alternative could be a failure to record the screening of the mother for PPD in the child's medical chart even when it has been administered. This has been suggested in the literature and could be especially relevant in our particular case given the structured and rigid format of the WCC visit evaluation form of the electronic medical charts used in the private health care network of PUC centres, which does not provide a formal space to record the results of the EPDS or a specific reminder to screen mothers for PPD attending WCC visits. Even assuming this limitation, it is likely that mothers with PPD are being under-diagnosed within the health care network mentioned with all of the health implications that this presents for the children and their mothers.

A practical solution to improve the recording or the EPDS in the health care network could be to include a formal space in WCC electronic medical chart that could act as a reminder to screen the mothers attending the WCC visits and to register the result.

This study has the strength of starting the conversation on a clinically relevant topic where concrete statistics were previously not available, but the main weakness however, due to its retrospective nature and based only on clinical records, is that it is only possible to hypothesize about the low percentage of EPDS recorded. There is no certainty about whether the low frequency is due to the lack of its use or its recording in the child's medical chart.

The findings of this study open a space for a discussion within our private health care network about the care of patients. PPD is a condition with sufficient epidemiological stature in our country. At the same time, screening for this disease is an activity that has shown, not only to significantly identify more cases of PPD than usual clinical evaluation, but also to be effective in identifying affected mothers and intervening in a timely way to improve results in health. Not doing so, therefore, implies a lower level of care provided to our patients.

In the private Chilean health care systems, contrary to what happens in the public health care system, a regulating (or auditing) entity does not exist for many of our clinical activities and it is not possible to ensure that we are doing what is recommended. In the private health care setting, providing the patient and his family the utmost care finally depends on the individual and/or collective motivations of its health care professionals, which is an unavoidable responsibility and a greater challenge when thinking about how to implement public policies at this health care level.

It is likely that the results of this study are not an isolated situation nor happen only in this institution. Therefore, a first challenge is to highlight this problem within our health care network and then within the rest of the community and country. Secondly, future studies are needed to understand this situation not only through a review of the literature about the low rates of the use of screening instruments, but also by consulting with the health care professionals, e.g. through an anonymous survey that would measure their level of knowledge about the EPDS and their perception of barriers and facilitators to use it, or future qualitative studies. Future studies should also aim to contrast the reasons for the different levels of use in the public and private health care systems (considering that sometimes it even comes down to the same health care professionals acting differently in each of the systems).

Finally, we hope to raise awareness among health care professionals and decision makers at private health care networks so that it is possible to incorporate the use of the EPDS for screening mothers for PPD as a regular activity in WCC visits in private health care centres in the context of the implementation of innovative processes.

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Declaration

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Ethical approval: This study has been approved by the appropriate ethics committee and has therefore been performed in accordance with the ethical standards stipulated in the 1964 Declaration of Helsinki and its later amendments.
Conflict of interest: none.

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