

Postpartum Depression: Novel Use of Video-Based Interventions

Lekie Dwanyen
Jason Hans

Abstract: Postpartum Depression (PPD) is associated with various contextual risk factors, yet lack of knowledge about PPD perpetuates stigma and negatively implicates those affected. Utilizing a sample of 1,178 respondents, the authors examined the extent to which a brief video-based educational intervention influenced respondents' attitudes concerning PPD. The effects of the intervention on four outcomes were assessed: (a) participants' recognition of PPD symptoms, (b) level of responsibility placed on the mother for her symptomology, (c) perceived risk of physical and psychological harm to the baby, and (d) perception of maternal fitness. The educational video positively affected symptom recognition and reduced stigmatizing views. Implications of these findings are discussed.

Keywords: postpartum depression, PPD, postnatal depression

Postpartum depression (PPD), also known as postnatal depression, is experienced by roughly one in seven American women (American Psychiatric Association, 2015; O'Hara & McCabe, 2013), can occur regardless of gravida or parity, and can persist for months or longer if not treated, potentially developing into a chronic depressive disorder (Mayo Clinic Staff, 2012). In terms of depression following childbirth, PPD is situated between its less severe and more severe counterparts, baby blues and postpartum psychosis, respectively (Mayo Clinic Staff, 2012).

Baby blues are experienced by about three-quarters of postnatal women, with onset typically occurring within five days after childbirth as hormonal levels change, and lasting for approximately two weeks postpartum (American Pregnancy Association, 2014). Symptoms associated with baby blues include poor concentration, mood swings,

Lekie Dwanyen, M.S., is a doctoral student in the Department of Family Social Sciences at the University of Minnesota. Lekie is a graduate of the University of Kentucky's family science master's program with an emphasis in couple and family therapy.

Jason D. Hans, Ph.D., CFLE, is a professor in the Department of Family Sciences at the University of Kentucky and editor of *Family Relations: Interdisciplinary Journal of Applied Family Science*.

impatience, restlessness, fatigue, sadness, crying without reason, anxiety, and irritability.

PPD entails more severe symptoms and can last for months. Symptoms vary by case, but can involve loss of appetite, feelings of inadequacy, reduced interest in sex, intense anger and irritability, insomnia, feelings of shame and guilt, withdrawal from friends and family, fatigue, difficulty bonding with baby, thoughts of self-harm or harm to the baby, severe mood swings, fear of being a bad mother, racing and scary thoughts, fear of being left alone with the baby, sleeping too much, excessive increase of appetite, and difficulty concentrating (American Psychiatric Association, 2015; Mayo Clinic Staff, 2012). Postpartum psychosis is the most severe level of depression following childbirth; symptoms extend to confusion, hallucinations, delusions, paranoia, disorientation, and actual self-harming behaviors (Mayo Clinic Staff, 2012).

Although PPD, which has elements of both physical (hormonal) and mental illness, has a notable prevalence rate (approximately 1 in 7; American Psychological Association, 2015), stigma associated with mental illness discourages treatment-seeking behaviors and contributes to underdiagnosis of the mood disorder (Thurgood, Avery, & Williamson, 2009). Stigma often stems from ignorance (Thornicraft, Rose, Kassam, & Sartorius, 2007). Thus, the aim of this study is to assess the effects of a video-based intervention on increasing knowledge and recognition of PPD symptoms, and reducing stigma toward those who experience the illness. In this study, knowledge refers to awareness of the prevalence, symptoms, risk factors, and common triggers of PPD.

Literature Review

Diagnosis and Service Utilization

PPD diagnoses are usually made by primary care physicians, obstetricians, and mental health providers, but at least 50% of cases go undiagnosed (Thurgood et al. 2009). Diagnosis rates are impacted by a lack of uniformity in screening procedures and instruments (Le, Munoz, Soto, Delucchi, & Ippen, 2004). Studies reporting the use of screening measures indicate that assessment varies from five weeks to twelve months following childbirth (with the median first-time assessment at three months) and multiple screening tools are used, including the Edinburgh Postnatal Depression Scale, the Beck Depression Inventory, the General Health Questionnaire, a clinical diagnostic interview, or a combination of more than one tool (Le et al. 2004).

Fortunately, postpartum depression has gained greater traction in health policy agendas. The U.S. Preventive Services Task Force, a panel appointed by the Department of Health and Human Services, has

recommended depression screening for women during and after pregnancy, acknowledging that PPD is experienced on a much larger scale than detected (Belluck, 2016). The recommendation included updated depression screening guidelines administered by the task force, which previously recommended depression screening only if clinics had staff to provide treatment and support; updates now recommend unconditional screening, attention to the accuracy of depression screening tools, and treatment support for pregnant and postpartum women (Siu & U.S. Preventive Services Task Force, 2016). Obstetricians and other health providers have expressed reluctance toward assessing for depression, and women impacted by PPD have reported apprehension about informing physicians about their symptoms (Belluck, 2016); thus, this recommendation for universal and uniform screening is a potentially fruitful step toward ensuring that women experiencing PPD are diagnosed and treated.

Detecting PPD

Clinical detection of PPD is a critical step toward ensuring provision of effective care for mothers experiencing distress, particularly because maternal recognition and acceptance of PPD symptoms can be hindered by personal and social pressures (Abrams, Dornig, & Curran, 2009). Maternal detection of PPD is sometimes difficult because there is a tendency to attribute symptoms of depression to unrelated factors such as personal weakness (e.g., inadequacy as a mother) rather than to the illness itself (Edhborg, Friberg, Lundh, & Widstrom, 2005). Attitudes and perceptions considerably impact the way women experience motherhood and how they believe they should fulfill the role, which could both inform their ability to detect signs and symptoms of the illness or seek the help needed. Depressed mothers tend to reject the PPD label because stigma associated with the illness produces feelings of guilt, shame, embarrassment, and fear, and further suggests that societal depictions uniformly portraying motherhood as a positive experience reinforce the stigma for women who do not experience the transition positively (Thurgood et al., 2009). Maternal role idealization, feelings about judgment from others, and ideas surrounding the responsibilities of motherhood are the three most influential dimensions of maternal perceptions that impact acceptance of depressive symptoms (Sockol, Epperson, & Barber, 2014). The barriers associated with idealized maternal expectations lead to masking of symptoms in order to reduce the risk of being seen as a bad parent (Thurgood et al. 2009).

Social Constructionism and PPD

As described, both the detection and treatment of PPD are hindered by social perceptions of the mood disorder. Berger and Luckmann's (1966) theory of social constructionism is a suitable lens to consider the role of socially constructed meanings in shaping PPD perceptions. They posited that society constructs the meanings that shape our perception of reality; in other words, our realities are shaped by shared experiences with others. In the context of parenting and PPD, social attitudes about motherhood impact the way a woman conceptualizes her maternal experience in relation to her expectations, and how she addresses the experience of depressive symptoms. The general ideology of motherhood, and society's tendency to devote greater attention to mothers meeting others' needs as opposed to their own (Medina & Magnuson), may work in conjunction with stigma and contribute to denial and low treatment-seeking behaviors among women with PPD (Abrams et al. 2009).

Impact of PPD on Child Development

Detecting PPD is especially important because the nature of the mood disorder is relational in that it affects an individual's engagement and interaction with those around them (American Psychiatric Association, 2015). Children of mothers with untreated PPD typically experience the greatest impact, which may be reflected in reduced parent-child interactions, compromise to the parent-child bond, and emotional and cognitive developmental issues for the child (Parsons, Young, Rochat, Kringelbach, & Stein, 2012; Paulson, Dauber, & Leiferman, 2006). For example, PPD may limit parents' ability to engage in developmental activities such as reading and singing with children (Paulson et al. 2006). In regard to emotional and cognitive development, children raised by mothers with PPD that is left untreated are more likely to develop insecure attachment styles, withdrawal patterns, and frequent irritability compared to those raised by mothers without PPD (American Psychiatric Association, 2015; Wachs, Black, & Engle, 2009). These children are also at higher risk of developing anxiety disorders, major depression, and behavioral issues during childhood and adolescence (American Psychiatric Association, 2015; Wachs et al. 2009). The relational impact of PPD substantiates the importance of detecting PPD symptoms more frequently and securing help for those impacted.

Educational Interventions

Video-based interventions are used to educate about various phenomena in medical, educational, and community settings. A systematic review of research on video-based educational interventions for modifying health behaviors demonstrated their effectiveness across a variety of health-related topics (Tuong, Larsen, & Armstrong, 2014). For

example, videos have been effective with regard to both knowledge (O'Donnell, Doval, Duran, & O'Donnell, 1995) and behavior (O'Donnell, O'Donnell, Doval, Duran, & Labes, 1998) concerning condom use and sexually transmitted diseases, for actually reducing rates of sexually transmitted infections (Warner et al., 2008), and for increasing the number of breast, colorectal, and cervical cancer screenings (Baron et al., 2008). Similarly, video-based information related to coronary medical procedures (i.e., coronary angiography and angioplasty) can substantially improve patient knowledge about the technicalities of each procedure (Giuseppe et al., 2007).

Video interventions have also been used in social science research to examine its effects on thoughts and (planned) behaviors. For example, viewing an educational video on non-medical child birthing options, particularly midwife-assisted out-of-hospital childbirth, had a considerably positive influence on attitudes toward and planned behaviors concerning midwife-assisted out-of-hospital childbirth (Hans & Kimberly, 2011). Video interventions are also effective for increasing knowledge and reducing stigma about mental illness (Thornicraft et al. 2007). Similarly, a combination of education and video interventions given through a school-based stigma reduction program substantially improved knowledge and decreased stigmatizing attitudes toward mental illness at pretest, posttest, and during a one-month follow-up (Chan, Mak, & Law, 2009). The idea that increased knowledge about an experience reduces stigma is further exhibited in a study regarding attitudes toward homosexuality, in which respondents with favorable attitudes largely reported having knowledge of and interaction with gay men and lesbians, while those with less favorable attitudes reported education as a means to potentially shift their view (Hans, Kersey, & Kimberly, 2012). The results of these and similar studies support the use of video-based educational interventions in clinical and educational settings as a method of increasing knowledge and reducing stigma.

The Present Study

Stigma surrounding mental illness may stem from lack of knowledge, influence attitudes and prejudices, and lead to differential interaction and treatment of those with the illness (Thornicraft et al. 2007). However, empirical evidence has demonstrated that interventions can reduce stigma by improving knowledge about mental illnesses (Thornicraft et al. 2007). Educational interventions that build awareness concerning PPD are needed, both for women who are childbearing and for those who work closely with perinatal women. Thus, the purpose of this study was twofold: (a) to assess the efficacy of a video intervention on participants' ability to recognize the symptoms of PPD, and (b) to assess the effects of video interventions on respondent attitudes toward the experience of PPD.

Based on existing empirical evidence, we hypothesized that after viewing a brief educational video, respondents would demonstrate better ability to recognize PPD symptoms and exhibit less stigma toward the experience of PPD.

Method

Sampling

A probability sample of students enrolled in medical, health, behavioral, and social science programs—due to their increased likelihood of entering careers where they will provide professional care or services to women in the postpartum phase—at a large Southern land-grant university were recruited for this study utilizing an adaptation of the Tailored Design Method (Dillman, Smyth, & Christian, 2009). The TDM sampling approach maximizes survey response rates, in part by employing a pre-contact, contact, and follow-up strategy when recruiting participants.

For the purpose of this study, e-mail addresses for all students in the sampling frame (i.e., those currently enrolled in medical, health, behavioral, and social science programs at the targeted university) were obtained via an open-records request. Instructors of courses within the targeted programs were contacted several weeks prior to data collection to request permission to have an informational pre-contact with as many students in the sampling frame as possible. The pre-contact consisted of delivering a 2-minute recruitment speech during regularly-scheduled class sessions informing students about the study, the reason they were being recruited, and alerting them that a hyperlink to the survey would be e-mailed to them in the coming hours or days.

As an incentive to complete the survey, the initial recruitment e-mails indicated that the first x number of responders (depending on the total number who were in each recruitment batch) would receive \$5 e-gift cards for Starbucks®; A total of 255 gift cards were distributed. Follow-up e-mails were sent both one and two weeks after the initial e-mail contact to those in the sampling frame who had not yet completed the survey. These recruitment procedures resulted in a completion rate of 26.3%. Family science (66.7%) had the highest response rate within particular programs of study, followed by public health (24.3%), psychology (23.8%), nursing (21.8%), pharmacy (21.5%), health sciences (19.5%), medicine (18.1%), and social work (14.1%).

Participants

The study sample was comprised of 1,178 students. Respondents ranged from 18 to 66 years of age ($M = 25.4$, $SD = 6.4$) and a majority of

the sample was comprised of females (82.6%), those who reported being single or never married (75.7%), and those who did not have children of their own (84.2%). A majority of the sample was also Non-Hispanic Whites (79.2%), followed by Blacks (7.1%), Asians (5.3%), and Hispanics or Latinos (3.0%). Nursing students ($n = 297$) were most prevalent in the sample, followed by students majoring in psychology ($n = 241$), medical school ($n = 216$), health sciences ($n = 194$), family science ($n = 128$), pharmacy school ($n = 106$), social work ($n = 68$), public health ($n = 59$), pre-medicine ($n = 37$), and pre-pharmacy ($n = 37$). All combined, 61.7% of respondents were undergraduates, 7.2% were master's students, and 31.1% were doctoral or professional students. Lastly, 20.3% of respondents reported paid employment experiences that required some knowledge of mental illness, and 32.5% reported a great deal of personal or academic experience with mental illness, 37.8% reported a moderate amount, and 26.2% reported little to no personal or academic experience with mental illness.

Design and Procedures

The study protocol was approved by the University of Kentucky Office of Research Integrity's Institutional Review Board (IRB). Participants provided informed consent before beginning the survey.

This study utilized a multiple-segment factorial vignette (MSFV) approach, an experimental design inspired by factorial surveys such as Rossi and Rossi (1990); both designs enable researchers to explore how various independent variables impact respondent knowledge, opinions, and attitudes about different phenomena that may otherwise be difficult to assess (Ganong & Coleman, 2006). An MSFV is unique from a factorial survey in that it presents a hypothetical scenario that spans across multiple segments and allows researchers to manipulate when the independent design variables are introduced as the story progresses. For example, a researcher may manipulate how gender impacts perceptions about household labor by randomly assigning some respondents to read that, "Julie rarely volunteers to cook dinner for her partner, Craig" and other respondents to read that, "Craig rarely offers to cook dinner for his partner, Julie." The researcher then might ask respondents to rate Julie or Craig's—depending on the scenario read—adequacy as a partner. Given a suitable sample size and random assignment to each condition, group differences in opinions about adequacy as a partner based on household labor preference could be credited to the experimental condition (i.e., gender of the partner).

The present study utilized a 2 x 2 x 2 x 2 multiple-segment factorial vignette (MSFV) design, meaning that four independent variables were included to assess opinions about PPD. The variables included: a) maternal age, b) history of depression, c) infant temperament, and

d) diagnosis or lack thereof; each included two levels. Spanning three segments, the vignette presented a scenario about a mother who recently gave birth. Each segment was followed by questions to assess respondents' detection of PPD symptoms and opinions about the mother and baby's circumstances. Respondents were randomly assigned to read one of 16 versions of the vignette.

Independent Design Variables

Young maternal age, history of depression, and infant temperament were chosen as independent design variables for this study because they are common risk factors that impact various aspects of individuals' experiences with PPD (American Psychiatric Association, 2015; Mayo Clinic Staff, 2012; Rich-Edwards et al., 2006). Rationales for inclusion of each risk factor are provided below.

Age. The vignette in the present study presents some respondents with a mother who is 19 years of age, and others with a mother who is 32 years of age. Age is an important variable because it plays a critical role in PPD onset; that is, younger and older motherhood pose greater risks of developing symptoms (American Psychiatric Association, 2015). Specifically for younger women, the PPD prevalence rate has been reported as high as 57% among adolescent mothers (Family & Youth Services Bureau, 2013; Schmidt, Wiemann, Rickert, & Smith, 2006), surpassing the national prevalence rate of 13-19% (O'Hara & McCabe, 2013). Additionally, adolescence is a particularly vulnerable time for mental health and wellbeing as comorbid anxiety disorders and depression are the most prevalent psychological disorders among this group (Graczyk & Connolly; 2015; Roberts, 2015). Adolescent motherhood also presents a higher risk of receiving stigma (SmithBattle, 2013), which may exacerbate PPD-related experiences and pose greater consequences for younger mothers and their baby.

History of depression. Depression history as an independent variable was presented with two levels in the vignette. One scenario depicted a mother who had previous experiences with depression and the other explained that the mother had no depression history. This variable is a critical component of the vignette because depression history has a domino effect on subsequent symptomology. That is, depression history is the largest predictor of antenatal depression, and antenatal depression is the largest predictor of postpartum depression (Rich-Edwards et al., 2006). In addition, past experiences with PPD substantially increase women's risk of developing PPD during or after subsequent pregnancies (American Psychiatric Association, 2015). Exploring the connection between a mother's history of depression or lack thereof and opinions

about her PPD experience may provide useful information about stigma and maternal expectations within this specific context.

Infant temperament. The extent to which caring for an infant is deemed “challenging” (e.g., infant is inconsolable, has erratic sleeping and eating patterns) is a considerable risk factor for PPD (American Psychiatric Association, 2015). The two levels of this variable presented in the vignette included a mother with an infant who was difficult to soothe and one whose infant had a mild temperament. Infant temperament and perceivably unfulfilled maternal expectations have reportedly influenced women’s experiences with PPD (Eastwood, Jalaludin, Kemp, Phung, & Barnett, 2012). For example, Edhborg et al. (2005) found that many women are inclined to blame their experiences on personal weaknesses. It is important to explore the extent to which others exhibit the same blame internalized by mothers, as this type of stigma may compound mothers’ feelings of shame and guilt. Attitudes concerning the experience of PPD may be influenced by impressions of the ease or difficulty of caring for a child, and infant temperament may also impact the level of stigma exhibited with regard to societal expectations of motherhood. Examining the influence of infant temperament on stigmatizing attitudes may highlight how caregiving responsibilities combined with maternal idealizations and expectations impact perceptions regarding the acceptability of PPD symptoms.

Segment 1.

Two independent design variables—maternal age (19 or 32 years of age) and infant temperament (mild or difficult-to-soothe)—were presented in the first segment. Additionally, five PPD symptoms—the minimum number of symptoms needed for diagnosis (American Psychiatric Association, 2013)—were revealed. Respondents read the following (italicized text represents the randomly manipulated independent variables):

Angela is *19/32* years old and gave birth to a baby a few weeks ago who turns out to have a very *mild/difficult-to-soothe* temperament. Angela has been experiencing mood swings, feelings of shame and guilt, loss of interest in eating, trouble sleeping more than three hours per night, and has withdrawn from friends and family since the birth of the baby. Her symptoms are getting worse by the day, and she missed her first checkup the week after giving birth and has not rescheduled.

Respondents began by indicating whether they believed Angela was experiencing normal post-childbirth experiences, or something more

serious (response options were *normal [baby blues]* and *serious [postpartum depression]*). Next, they indicated the extent to which they believed Angela was responsible for her current emotional state (*a great deal, a moderate amount, a little bit, not at all*), and the extent to which they believed Angela's baby was at direct risk for physical harm and psychological/social harm (*a great deal, a moderate amount, a little bit, not at all*) due to her experiences. Lastly, respondents were asked whether they believed Angela was a fit mother (*yes, no*).

Segment 2.

An additional PPD symptom was revealed in the second segment: The mother's thoughts and daydreams about the baby either disappearing or dying were revealed to all respondents. A third independent design variable was also introduced: Some respondents read that the mother had a history of depression or mood disorders, and others read that she had no history of depression or mood disorders. The second segment read as follows:

A few weeks after giving birth, Angela went for a checkup and told the physician that she was struggling with thoughts of wishing she hadn't had the baby and that, although she would not hurt the baby herself, she sometimes experienced intrusive thoughts about the baby disappearing or dying. Angela has no history of depression or mood disorders.

Respondents then answered the same closed-ended questions that were asked after the first segment.

Segment 3.

The physician's assessment of Angela's experiences was disclosed in the third segment. While some respondents read that the physician diagnosed Angela with PPD, others read that she received no diagnosis. Respondents read the following:

After talking to Angela about her experience further, the physician decided that she *had postpartum depression/did not have postpartum depression, but normal post-childbirth feelings that would subside over time without intervention*.

The closed-ended questions after this segment did not query respondents' opinions about whether or not Angela was experiencing normal (baby blues) or more serious (PPD) symptoms. Although similar to the previous segments, they were asked the extent to which they felt she

was responsible for her emotional state, the degree to which they believed her baby was at direct risk of physical or psychological harm due to her experiences, and if they believed she was a fit mother.

Educational Video

In addition to the multiple-segment factorial vignette (MSFV), a pretest-posttest design was implemented to examine the extent to which viewing an educational video on PPD would change responses. Pretest-posttest designs are commonly used for examining the effectiveness of an intervention (Gliner, Morgan, & Leech, 2011). For example, a community-based organization may create a campaign to highlight the importance of parental involvement in children's schooling. The dependent variable in this case (i.e., what the pretest-posttest design would reveal) is shifts in attitudes about involvement.

The intervention used for this study was a five-minute video adapted from Postpartum Support International's 13-minute, "Healthy Mom, Happy Family: Understanding Pregnancy and Postpartum Mood and Anxiety Disorders," educational DVD. The video was adapted to minimize length while ensuring that essential and relevant information was not cut. Specifically, segments that were retained for the adapted video included an introduction, information pertaining to distinguishing types of perinatal mood disorders, PPD symptoms, PPD risk factors, PPD treatment options, and Postpartum Support International contact information. Although brief portions of personal testimonies were retained to provide contextual information about living with PPD, the majority of excluded segments from the original video contained anecdotal accounts from mothers who had experienced PPD. The adapted video, as well as specific time segments of the video, are available upon request.

Posttest vignette

After the participants viewed the educational video, the pretest vignette was repeated, but the variables were not randomly manipulated for the posttest vignette. Rather, each of the four variable levels not presented in the pretest vignette were selected for the posttest vignette. For example, respondents who initially heard about a 19-year-old with no history of depression, a mild-tempered child, and a diagnosis of PPD for the pretest vignette, heard about a 32-year-old with a history of depression, a difficult-tempered child, and no diagnosis of PPD for the posttest. The same survey items that followed the pretest vignette were repeated after the posttest vignette.

Analytic Approach

Differences in respondents' classification of the mother's symptoms as baby blues or PPD, and respondents' opinions about her parental fitness, before and after the intervention, were examined using chi-square tests. Paired samples *t*-tests were used to examine differences in perceptions of maternal symptomatic responsibility, and perceived risk of physical and psychological harm to the baby, before and after participants viewed the educational video. The magnitude of the effects were assessed using *d* effect sizes.

Results

Preliminary Analyses

Roughly 30% of respondents who completed the first vignette elected to terminate the survey prior to completing the second vignette (i.e., they terminated participation at some point during the respondent characteristics, educational video, or posttest vignette). Therefore, chi-square and independent samples *t* tests comparing responses on the first vignette between those who completed the survey and those who completed the first vignette but terminated prior to completion of the second vignette were conducted to guard against mortality biases in the intervention portion of the analysis. Results (available upon request) did not reveal any systematic differences between the two groups, and those differences that did exist were meaningless in magnitude ($d = 0.04-0.15$). Response distributions that did not meet the assumptions of normality were also adjusted prior to conducting the paired-samples *t* tests using square root transformations.

Descriptive Statistics of Independent Variables

Results demonstrated an overall high initial symptom recognition rate among respondents. That is, 91.5% of respondents correctly assessed that the mother was experiencing PPD after learning about her baby's temperament and her history of depression, but prior to learning the physician's opinion. Table 1 provides descriptive statistics of responses between each independent design variable and reveals a relatively consistent respondent diagnosis rate across the experimental vignette conditions.

Table 1

Percentage of Responses Within Each Level of the Independent Variables

Independent variable	<i>n</i>	Baby Blues or Postpartum Depression?		
		Baby Blues	Postpartum Depression	Don't know
Maternal age				
19 years of age	964	10.5	88.2	1.3
32 years of age	907	12.1	86.3	1.5
Infant temperament				
Difficult to soothe	968	10.5	88.2	1.2
Mild	903	12.1	86.3	1.7
Age x temperament				
19 x difficult	508	9.4	89.8	0.8
19 x mild	456	11.6	86.4	2.0
32 x difficult	460	11.7	86.5	1.7
32 x mild	447	12.5	86.1	1.3
Depression history				
History of depression	857	5.7	93.7	0.6
No history of depression	852	9.5	89.2	1.3

Effects of the Intervention on PPD Recognition and Stigma

Differences in perceptions of maternal symptomatic responsibility, and perceived risk of physical and psychological harm to the baby, before and after participants viewed the educational PPD video were examined using paired samples *t* tests (see Table 2). Effect sizes (*d*) for the paired-samples *t* tests were computed using pretest and posttest means and standard deviations to avoid the systematic overestimation of effect produced by paired-samples *t* scores relative to independent samples *t* scores (Dunlop, Cortina, Vaslow, & Burke, 1996). Mean differences revealed that the degree of responsibility placed on the mother for her symptoms decreased after each segment of the vignette after watching the video. In addition, perceived risk of physical harm to the baby decreased after the first and third vignette segments, but remained the same after the second segment. Finally, perceived risk of psychological harm to the baby decreased after the first and third vignette segments, but increased after the second segment following the video. The largest effect sizes were

observed in the decline of perceived risk for physical and psychological harm to the baby after the first vignette segment.

Table 2

Group Differences in Outcome Variables Before and After the Intervention

Variable	Before the Intervention		After the Intervention		<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i>	95% CI
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>					
Segment 1									
Responsible [†]	0.44	0.57	0.37	0.56	4.87	1178	<.001	0.12	[0.04, 0.20]
Physical harm	1.57	0.84	1.17	0.92	15.97	1157	<.001	0.45	[0.37, 0.54]
Psychological harm	1.77	0.88	1.36	0.95	16.08	1164	<.001	0.45	[0.37, 0.53]
Segment 2									
Responsible [†]	0.51	0.61	0.41	0.60	6.06	1169	<.001	0.16	[0.08, 0.24]
Physical harm [†]	1.46	0.31	1.46	0.94	-0.11	1172	<.001	0.00	[-0.07, 0.06]
Psychological harm [†]	1.37	0.31	1.61	0.96	-6.72	1167	<.001	-0.34	[-0.42, -0.25]
Segment 3									
Responsible [†]	0.44	0.59	0.32	0.54	8.94	1169	<.001	0.21	[0.12, 0.29]
Physical harm	1.55	0.94	1.31	0.97	11.22	1167	<.001	0.25	[0.17, 0.33]
Psychological harm	1.77	0.95	1.47	0.97	13.10	1165	<.001	0.31	[0.23, 0.39]

Note. CI = confidence interval for the effects size (*d*). [†] = transformed variables.

Chi-square tests were then conducted to examine the differences in respondents' classification of the mother's symptoms as baby blues or PPD, and respondents' opinions about her parental fitness. Results demonstrated that the intervention had a positive impact on the likelihood of respondents correctly classifying the mother's symptoms. That is, after watching the video, respondents were more likely to attribute the mother's symptoms to PPD than to baby blues. Respondents were 2.2 times more likely to move in the correct direction than in the incorrect direction after Segment 1 ($\chi^2(1, N = 1159) = 75.89, p < .001, d = 0.53, 95\% \text{ CI } [0.41, 0.65]$) and were 4.5 times more likely to do so after Segment 2 ($\chi^2(1, N = 1157) = 63.41, p < .001, d = 0.48, 95\% \text{ CI } [0.36, 0.60]$).

The results also indicated that the intervention had a positive effect on reducing stigmatizing views about the mother's parental fitness. Respondents were 5.6 times more likely to indicate that she was a fit mother after Segment 1 ($\chi^2(1, N = 991) = 218.24, p < .001, d = 1.06, 95\% \text{ CI } [0.92, 1.20]$), 5.5 times more likely to do so after Segment 2 ($\chi^2(1, N =$

979) = 305.16, $p < .001$, $d = 1.35$, 95% CI [1.19, 1.50]), and 6.4 times more likely to do so after Segment 3 ($\chi^2(1, N = 1005) = 359.97$, $p < .001$, $d = 1.49$, 95% CI [1.34, 1.65]).

Discussion

This study was conducted to explore the effects of a video-based intervention on PPD symptom recognition and stigma. Findings revealed that viewing a five-minute educational video positively impacted respondents' attribution of symptoms presented to PPD rather than baby blues, and influenced stigmatizing attitudes toward the experience of PPD.

Recognizing PPD

The study first tested respondents' ability to recognize the symptoms presented in the vignette as PPD rather than baby blues, the latter of which is clinically normal and therefore does not require clinical attention. The high rate of PPD symptom recognition in this study—more than nine in ten respondents correctly diagnosed PPD—is incongruent with the national PPD diagnosis rate of 50% presented in the literature (Thurgood et al. 2009). This suggests that the disconnect between PPD prevalence and diagnosis rates may not stem from lack of knowledge per se, but other factors that may limit clinicians' ability or propensity to label a mother's experience as PPD when presented with cases that may qualify as such. For example, one possible explanation for low rates of diagnosis juxtaposed with high symptom recognition may relate to obstetricians and other health providers' reluctance to assess for depression in the absence of adequate treatment and support staff (Belluck, 2016).

Although results revealed a high overall initial PPD recognition rate, exposure to the educational video had positive effects for those who initially misperceived the mother's symptoms. As hypothesized, after watching the educational video respondents demonstrated greater knowledge by their ability to classify the mother's experience as PPD rather than baby blues. Although there was a high symptom recognition rate prior to the video, findings revealed that many of those who believed the mother was experiencing baby blues at pretest recognized her symptoms as PPD after the video. This finding is consistent with previous research indicating that educational interventions are effective for increasing knowledge acquisition concerning health-related topics (O'Donnell et al. 1995; Tuong et al. 2014). The present study advances this body of literature by demonstrating the effectiveness of video-based education in the context of PPD.

The Intervention

In addition to positively impacting respondents' ability to recognize PPD symptoms, viewing the educational video generally reduced stigmatizing opinions about PPD. However, the lone contrary result indicated that concern for the psychological well-being of the child increased after the second vignette segment in which the mother's history of depression and thoughts regarding the baby disappearing or dying were introduced. This relationship between stigma and depression history likely reflects the broader societal issue of stereotyping and social distancing that occurs with regard to psychiatric labels (Angermeyer & Matschinger, 2003; Pescosolido, 2013). Additionally, the symptoms presented regarding the mother's thoughts may have heightened respondent concern and contributed to greater immediate perceptions of psychological risk.

The findings demonstrating the impact of the educational video align with previous research emphasizing the effectiveness of video-based interventions for increasing knowledge (O'Donnell et al. 1995; Tuong et al. 2014) and shifting attitudes (Chan et al., 2009; Hans & Kimberly, 2011) about various health related topics. However, the relative stability of judgments when a history of depression existed suggests that interventions intended to increase knowledge about PPD may benefit from devoting considerable attention to highlighting depression history as one of the largest determinants of PPD onset (Rich-Edwards et al. 2006), and negative thoughts about the baby as a common symptom (American Psychiatric Association, 2015; Mayo Clinic Staff, 2012), as a means to potentially reduce associated stigma.

Although untreated postpartum depression can have adverse consequences on children, popular media has exaggerated perceptions of direct harm posed from mothers with PPD to their babies (Pacific Postpartum Support Society, 2016). The media displays stories about mothers who harm or kill their child without distinguishing PPD from postpartum psychosis, the more severe postnatal disorder that tends to result in such situations (Pacific Postpartum Support Society, 2016). This lack of distinction may explain respondents' increased perceptions of physical and psychological harm prior to the viewing the educational video. This therefore suggests that the information presented in the educational video—distinction between perinatal mood disorders, explaining PPD symptoms, risk factors, and treatment—may have contributed to the positive shifts observed in respondents' attitudes about PPD.

Limitations

The present study contributes to existing literature by revealing previously unexplored findings about PPD knowledge and stigma; however, some study limitations should be noted. The study sample included students in behavioral, social, health, and medical science programs; thus, results do not apply to the general public. Future studies seeking to explore PPD stigma more widely may consider targeting a more general sample in order to assess broader public perceptions of the topic. Although the sampling frame was chosen for their increased likelihood of providing social or healthcare services to postpartum women, there is no guarantee that the students within the sample will not end up in careers related to their program of study. Similarly, students from disciplines outside of the sampling frame may occupy careers requiring knowledge of, and experience with PPD. These previous points limit the generalizability of the present findings to professional settings.

Limitations regarding the study design should also be noted. First, the vignette design is artificial in that it presents a hypothetical scenario to be interpreted and poses a risk of receiving more conscious responses and attitudes than what might be exhibited in real life situations (Hughes & Huby, 2004). Second, the vignette only included a scenario where the mother had PPD. Presenting a separate case where the mother had baby blues would provide more accurate conclusions regarding respondents' ability to differentiate PPD from baby blues. Third, although the vignette stated that "she gave birth a few weeks ago" and listed the minimum number of symptoms required to qualify as PPD, different interpretations of "a few weeks" may have impacted respondents' judgment about whether or not the mother's experience surpassed baby blues, which is widely considered to only last for two weeks (American Pregnancy Association, 2014). Future studies utilizing this design should be more explicit about the number of weeks symptoms had persisted.

The brevity of the intervention used in this study presents another opportunity spot for future studies to explore. The video was designed to provide as much information about PPD as possible within a brief time frame, in order to limit attrition—which would ultimately be inevitable—and inattention due to video length. Clinical, training, or educational settings that have greater freedom and time availability may benefit from utilizing a more comprehensive version of the PPD video. It could be beneficial to examine respondent attitudes given greater exposure to supplementary information (e.g., personal anecdotes) that supports PPD facts. Lastly, future studies may benefit from implementing a long-term follow-up assessment and exploring changes in respondent knowledge about, and attitudes toward PPD, at multiple time points following exposure to the educational video.

Conclusions

Findings from the present study revealed an initially high PPD symptom recognition rate by students in behavioral, social, medical, and health science programs; symptom recognition strikingly exceeded the national PPD diagnosis rate. After watching the five-minute educational video about PPD, those who were previously inaccurate demonstrated better ability to assess PPD symptoms. The video also had a positive impact on stigmatizing opinions related to PPD. Across the board, after watching the video, respondents placed less blame on the mother for her experience and were more confident in her potential parenting fitness. While perceptions of physical and psychological risks of harm to the baby generally declined after the video, results revealed how psychiatric labeling may contribute to perpetuating stigma. These findings have implications for the use of this tool within academic and clinical settings that seek to provide brief but impactful education about PPD. The video may also be useful in healthcare settings for educating pregnant and postpartum women about risk factors, symptoms, and treatment options for PPD. Although PPD is experienced within an individual, it can have minor to severe consequences for the child and the family if untreated. Thus, ensuring greater awareness among those most likely to provide care and services to postpartum women is an important step in ensuring quality care for individuals and the families impacted by PPD.

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