A study of psychological impact on women undergoing miscarriage at a Sri Lankan hospital setting.

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Abstract

Introduction: Miscarriage is common and affect one third of women some time during their lifetime. Its management has seen many advances in recent times including introduction of less interventional methods, thus seldom cause serious complications. However, the psychological morbidity associated with miscarriage is often overlooked and data on the subject among Sri Lankan population is scarce. This study was aimed at describing the presence of psychological morbidity among women after a miscarriage and to determine the factors associated with development of such morbidity in a local population.

Method: A cohort study was carried out at a gynaecology unit of the North Colombo Teaching Hospital, Ragama, between August 2011 and April 2012. The exposed group included 198 consecutive consenting women who had an early pregnancy loss and were compared with 179 parity and gestation matched controls. Two validated psychological assessment tools, the General Health Questionnaire 30 (GHQ30) and the Edinburgh postnatal depression questionnaire (EPDS) were administered at the initial visit and 6-8 week later in both groups. The threshold levels of 6 and 9 were used for GHQ30 and EPDS scales, respectively.

Results: At the initial assessment, the psychological morbidity of screen positives by the GHQ30 was 42.4% and 11.7% (OR5.54, 95%CI 3.25-9.46) in the exposure and controls groups, respectively. With the EPDS it was 23.7% and 10.1% (OR2.78, 95%CI 1.55-5.0). At the 6-8 week follow up the GHQ30 screen positive rate among exposure and control groups were 25.4% vs. 9.9% (OR 3.0, 95%CI 1.64-5.48), while with the EDPS, it was 24.8% vs. 10.5% (OR 2.81, 95%CI 1.55-5.09).

The factors associated with screen positive psychological morbidity among subjects of the exposure group were common to both scales. At the initial visit they included age>30 years, having had secondary or more education, a history of infertility preceding the miscarriage, a history of previous miscarriage, nulliparity and a gestation >12 weeks. The same factors, with the exception of education level, were associated with screen positive psychological morbidity with both scales at 12 weeks too.

Discussion: This study shows the psychological morbidity following miscarriage can be as high as 40% in the initial stage while it can persist in around a quarter of patients even after 6-8 weeks. Recognitions and providing effective treatment including psychological support should be an integral part of management of miscarriage. Risk factors associated with psychological morbidity have been identified and these should be used to identify women who are at a higher risk of developing such abnormalities in order to provide effective screening and offer treatment.

INTRODUCTION

Early pregnancy loss is a common gynaecological presentation and is estimated to be occurring in up to one in four pregnancies, whereas up to 12-15% of confirmed pregnancies do not progress to term.[1,2] There have been many advances in management of miscarriage in recent time including introduction of expectant and medical management protocols. However, study of the psychological impact of the condition and its management has not received similar attention.

Recent evidence suggests that spontaneous miscarriage is associated with significant and possibly enduring psychological consequences. More than half the women who suffer from a miscarriage would suffer from various psychological morbidities in the weeks and months following the event. The common psychological problems include depression and anxiety. While a short grief reaction following the event can be normal some progress to a pathological prolonged grief reaction.[1-4]

Management of early pregnancy loss is often straightforward and rarely cause life threatening complications. With introduction of expectant and medical treatment options, very few women require more extensive interventions such as surgical evacuation.

However, the psychological aspects of early pregnancy loss are often overlooked. Unlike in postpartum psychological problems, in the context of miscarriage, simple and effective screening measures of psychological morbidity have not been well established. Few studies have reported on this subject in local settings. Studies conducted elsewhere have suggested that grief and depression after spontaneous miscarriage are often unrecognised by medical profession.[5]

It has been reported that women who experience pregnancy loss, grieve intensely and are at risk for psychiatric symptomatology and possibly clinical disorders following the event.[6] The recognised factors that contribute to such morbidity include demographic factors, psychiatric history, pregnancy-specific factors, reproductive history, satisfaction with the care provided by healthcare professionals during and following the loss and perception of social support.[7-10] The association of such factors with psychological morbidity after miscarriage has not been reported in Sri Lanka.

This study was aimed at assessing the presence of psychological morbidity among women who underwent an early pregnancy loss at a Sri Lankan hospital setting and to describe the factors associated with such morbidity. Aims of this study were to compare the rate of psychological morbidity in a group of women who underwent an early pregnancy loss and a control group of gestation matched pregnant

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women with an uncomplicated pregnancy and to describe the association between psychological outcome and demographic, obstetrics and social factors among women who undergo early pregnancy loss.

METHODS

A cohort study was carried out at an obstetrics and gynaecology unit of the North Colombo Teaching Hospital, Ragama, from August 2011 to April 2012. The exposed group included 198 consecutive women who were admitted to the unit with an early pregnancy loss (less than 24 weeks) while 179 parity and gestation matched controls with uncomplicated on going pregnancies were recruited from the antenatal clinic. Women were recruited to the exposure group within 24 hours of diagnosis and the informed consent was obtained for study participation. The controls were recruited at the antenatal clinic among women with uncomplicated pregnancies. Previous psychiatric illness, inability to read or speak Sinhalese and conditions that limit their ability to understand the study questions were considered as exclusion criteria.

Both groups had an initial interview with a pre-tested questionnaire at recruitment, which included data collection on demographic, social and obstetrics history. The psychological morbidity was assessed using Sinhala translations of two questionnaires, the General Health Questionnaire (GHQ-30) and Edinburgh postnatal depression questionnaire (EPDS). These were self administered at the initial visit as well as after 6-8 weeks from recruitment. The latter was carried out by mailing the questionnaire to the subjects and requesting them to post it back after completion.

The Edinburgh postnatal depression (EPDS) scale was originally designed to identify women with depression in postnatal period. Since then, it has been validated to be used outside the post partum period including pregnancy.[10-13] The Sinhalese translation of EPDS has been validated by Rowell *et al*. to detect depressive symptoms among Srilankans population.[14] It is a 10-items questionnaire on which women rate their feelings over the preceding seven days, giving a score ranging from 0 to 30.

The GHQ-30 is a widely used tool to assess the psychological status in non-psychiatric settings worldwide. It has been used effectively in different societies in different languages. A Sinhalese version of the 30-items general heath questionnaire (GHQ-30) has been validated to our population.[15] There are different scoring methods used and a likert method (0,0,1,2) was used in this study. In this study, threshold levels for positive screening were set at scores of 6 for GHQ-30 and 9 for the EDPS.[14,15]

The data analysis was done for comparison of the two groups for socio-demographic data as well as to describe the presence of psychological morbidity in each group and to determine the association between socio-demographic and obstetric data and psychological morbidity among women who underwent a miscarriage. Means, relative risks and odds ratios with confidence intervals were used for comparisons. A statistical significance level of 5% was considered for all analysis. This study did not raise any major ethical issues. All women who were found to have a significant psychological morbidity were offered evaluation at a psychiatry clinic. The ethics review committee of the Faculty of Medicine, University of Kelaniya, approved the study protocol prior to study commencement.

RESULTS

The initial assessment was completed by 198 women with an early pregnancy loss and 179 controls. The two groups were comparable in baseline characteristics including age, mean period of gestation, history of a previous miscarriage and a history of infertility prior to this pregnancy. The comparison of the two groups according to these baseline characteristics is shown in table 1. The response rate at six to eight weeks follow up was 89.4%(177/198) in the exposure group and 95.5%(171/179) in the control group. The dropouts were solely due to non-responding to the follow up questionnaire sent by post.

The rate of screen positive women with GHQ 30 was higher at the initial assessment among women who underwent an early pregnancy loss compared to the controls (42% vs. 11.7%, RR 5.54; 95%CI 3.25-9.46). Similar association was seen with the use of EPDS scale as well (23.7% vs 10.1%, RR 2.78; 95%CI 1.55-5.0). Also at the six to 8 week follow up the screen positive psychological morbidity was higher among exposure group than the control group with both GHQ 30 (25.4% vs. 9.9%, RR 3.0; 95%CI 1.64-5.48) and EPDS (24.8% vs 10.5%, RR 2.81; 95%CI 1.55-5.09). This is shown in table 2.

The socio demographic and past obstetric factors that were associated with a screen positive psychological morbidity at initial assessment among women who underwent an early pregnancy loss included age of more

Table 1. Basic characteristics of the subjects in exposure and control groups.

Character	Exposure group (n=198)	Control group (n=179)	95% CI
Age in years; mean	26.8	27.5	-0.39 - 1.79
Period of gestation; mean	13.1	13.9	-0.7 – 2.3
Previous miscarriage; no(%)	34(17.2%)	23(12.8%)	OR 1.41(0.79-2.49)
Planned pregnancy; no(%)	95(48%)	97(54.2%)	OR 0.78(0.52-1.17)
Preceding infertility; no(%)	10(5.1%)	17(9.5%)	OR 0.51(0.23-1.14)

Table 2. The rate of screen positive psychological morbidity among subjects in exposure and control groups at initial assessment and at 6-8 week follow up assessment

	Exposure group	Control group	95% CI
At the initial assessment	n=198	n=177	
GHQ 30; n(%)	84(42.4%)	21 (11.7%)	RR 5.54 (3.25 – 9.46)
EPDS; n(%)	47(23.7%)	18(10.1%)	RR 2.78 (1.55 – 5.0)
At the 6-8 week follow up	n = 177	n = 171	
GHQ 30; n(%)	45(25.4%)	17(9.9%)	RR 3.0 (1.64 -5.48)
EPDS; n(%)	44(24.8%)	18(10.5%)	RR 2.81 (1.55 – 5.09)

Table 3. The association between socio demographic and past obstetric factors and screen positive psychological morbidity with GHQ 30 and EPDS scales among exposure group at the initial assessment

	With GHQ 30			With EDPS		
	Screen positive n = 84	Screen negative n = 114	OR (95% CI)	Screen positive n = 47	Screen negative n = 151	OR (95% CI)
Age >30 years	31(36%)	22(19%)	OR 2.45* (1.29-4.63)	22(46%)	31(20%)	OR 3.41* (1.71-6.79)
Secondary education or more	61(72%)	61(53%)	OR 2.3* (1.26-4.2)	33(70%)	72(47%)	OR 2.59* (1.29– 5.19)
Unemployed	57(67%)	63(55%)	OR 1.71 (0.95-3.07)	32(68%)	88(58%)	OR 1.53 (0.77-3.04)
History of infertility	11(13%)	2(1.7%)	OR 8.44* (1.83-38.8)	10(21%)	3(1.9%)	OR 13.3* (3.52-50.5)
Previous miscarriage	28(33.3)	8(7.0%)	OR 6.63* (2.84-15.4)	24(51%)	12(7.9%)	OR 12.1* (5.35-27.3)
Planned pregnancy	43(51%)	55(48%)	OR 1.13 (0.64-1.97)	27(57%)	71(47%)	OR 1.52 (0.79-2.93)
Nulliparity	59(70%)	61(53%)	OR 2.05* (1.13-3.71)	40(85%)	80(52%)	OR 5.07* (2.15-11.9)
POG > 12 weeks	52(61%)	42(36%)	OR 2.79* (1.56 – 4.97)	34(72%)	60(39%)	OR 3.97* (1.95-8.08)

Significant associations are marked with an *.

than 30 years, an education up to secondary level or beyond, history of infertility, previous history of miscarriage, nulliparity, and a period of gestation beyond 12 weeks. These factors, with the exception of the education level, also showed a positive association at 6-8 weeks follow up. The association between these factors and psychological morbidity among women who underwent an early pregnancy loss is shown in table 3 and 4.

DISCUSSION

This study attempted to address an area that is very important in clinical practice, yet seldom reported in local settings. It studied the rate of psychological morbidity among women who undergo a miscarriage, which is a very common gynecological presentation. It is important to study this in different settings since the psychological response to such a life event varies among different populations.

This study was able to demonstrate the rate of significant psychological morbidity after a miscarriage can be as high as 40% in the initial stage while nearly one quarter of women continues to have such morbidity after 6-8 weeks. This is a high proportion and therefore, assessment and management of it should be made part of routine clinical management of these patients. The comparison group allowed us to demonstrate the psychological morbidity seen in affected individuals is beyond what is expected due to pregnancy.[16,17] The results also demonstrated that some women improve their psychological status with time, as the rate of screen positive women reduced by 6-8 weeks.

Early grief reaction to the traumatic event of miscarriage is likely the reasons for high GHQ 30 score at the initial stage. Such emotional reactions include a feeling of sadness, emptiness, anxiety, anger, and some depressive symptoms. Most of the previous studies highlighted the depressive disorders rather than anxiety following a miscarriage.[4,18,19] Therefore, miscarriage has typically been conceptualized as a loss, thus significantly less research been conducted to study the anxiety reaction following miscarriage. In this study, the GHQ 30 scale was used to assess other areas of psychological morbidity, since the EPDS measures mainly depressive symptoms.

While the proportion of women who were screen positive for GHQ 30 scale reduced from 42% to 24% at 6-8 weeks, the proportion of women who were EPDS screen positive did not change considerably (23.7% vs. 24.8%). This demonstrates that while the general psychological health improves with time, the depression that ensues can persist for a longer period of time. Similar observations have also been noted in previous studies.[16]

The factors associated with psychological morbidity among women who underwent miscarriage are useful in identifying women who are at a higher risk for such morbidity

Table 4. The association between socio demographic and past obstetric factors and screen positive psychological morbidity with GHQ 30 and EPDS scales among exposure group at the 6-8 week follow up

	With GHQ 30			With EDPS		
	Screen positive n = 45	Screen negative n = 132	OR (95% CI)	Screen positive n = 44	Screen negative n = 133	OR (95% CI)
Age >30 years	21(47%)	22(17%)	OR 4.38* (2.09-9.14)	21(47%)	22(16%)	OR 4.61* (2.19-9.67)
Secondary education or more	33(73%)	77(58%)	OR 1.96 (0.94-4.11)	32(72%)	78(58%)	OR 1.88 (0.9-3.94)
Unemployed	29(64%)	83(63%)	OR 1.07 (0.53-2.15)	29(65%)	83(62%)	OR 1.16 (0.57-2.37)
History of infertility	7(16%)	3(2.2%)	OR 7.9* (1.97-31.8)	7(15%)	3(2.2%)	OR 8.2* (2.04-32.8)
Previous miscarriage	23(51%)	9(6.8%)	OR 13.7* (5.65-33.6)	22(50%)	9(6.7%)	OR 13.7* (5.65-33.6)
Planned pregnancy	21(47%)	62(47%)	OR 0.99 (0.5-1.93)	23(52%)	63(47%)	OR 1.22 (0.62-2.39)
Nulliparity	38(84%)	76(58%)	OR 4.00* (1.68-9.53)	38(86%)	76(57%)	OR 4.75* (1.9-11.8)
POG > 12 weeks	32(71%)	49(37%)	OR 4.17* (2.0-8.64)	31(70%)	50(38%)	OR 3.96* (1.91-8.21)

Significant associations are marked with an *.

so that effective screening and treatment strategies can be introduced. These observations were similar to previous work on the subject.[3,20]

In conclusion, psychological morbidity following miscarriage is common and in some it lasts longer than the initial grief reaction. Health care providers should be sensitive to this and attempts should be made to screen and treat such morbidity. Risk factors associated with psychological morbidity have been identified and these should be used to identify women who are at a higher risk of developing such abnormalities in order to provide effective screening and offer treatment.

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