Social Support, Coping, and Self-Esteem in Relation to Psychosocial Factors: A Study of Health Issues and Birth Weight in Young Mothers in Tehran, Iran

Mozhdeh Nasseh Lotf Abadi

Department of Social Work
Umeå University, Sweden
Umeå 2012
# Table of Contents

Table of Contents .......................................................................................................................... i  
ABBREVIATIONS ........................................................................................................................... iii  
LIST OF ORIGINAL ARTICLES .......................................................................................................... iv  
ABSTRACT ..................................................................................................................................... v  
THESIS AT A GLANCE .................................................................................................................... vii  
INTRODUCTION ............................................................................................................................ 1  
  Women’s life in Iran ................................................................................................................... 1  
  Rational of the study ............................................................................................................... 4  
AIMS AND OBJECTIVES ................................................................................................................. 5  
CONCEPTUAL FRAMEWORK .......................................................................................................... 6  
  Health and mental health status in Iranian women ............................................................... 6  
  Experience of domestic violence by young Iranian women ................................................. 8  
  Social support ...................................................................................................................... 8  
  Self-esteem ......................................................................................................................... 9  
  Coping ............................................................................................................................... 10  
  Life events ....................................................................................................................... 11  
MY POINT OF DEPARTURE FOR INVESTIGATION ........................................................................... 12  
MATERIAL AND METHODS ........................................................................................................... 14  
  Overall research design ................................................................................................... 14  
  The context of the study ................................................................................................ 14  
  Questionnaires ............................................................................................................... 15  
  Statistical analysis ......................................................................................................... 19  
RESULTS ...................................................................................................................................... 22  
DISCUSSION ................................................................................................................................ 26  
  Domestic violence and health outcome ........................................................................... 27  
  Coping and social support ............................................................................................. 29  
  Socio-demographic variables and health outcome ......................................................... 31  
  Methodological considerations ....................................................................................... 32  
  Ethical considerations ................................................................................................. 35  
CONCLUSIONS AND IMPLICATIONS .............................................................................................. 36  
ACKNOWLEDGMENTS .................................................................................................................. 38  
REFERENCES ................................................................................................................................ 40
This work is dedicated to:

My mother Maryam
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANCOVA</td>
<td>Analysis of Co-Variance</td>
</tr>
<tr>
<td>ANOVA</td>
<td>Analysis of Variance</td>
</tr>
<tr>
<td>C/S</td>
<td>Caesarean Section</td>
</tr>
<tr>
<td>DV</td>
<td>Domestic Violence</td>
</tr>
<tr>
<td>GHQ</td>
<td>General Health Questionnaire</td>
</tr>
<tr>
<td>HRQoL</td>
<td>Health Related Quality of Life</td>
</tr>
<tr>
<td>KMO</td>
<td>Kaiser Meyer Olkin</td>
</tr>
<tr>
<td>LBW</td>
<td>Low Birth Weight</td>
</tr>
<tr>
<td>LEC</td>
<td>Life Event Checklist</td>
</tr>
<tr>
<td>MANOVA</td>
<td>Multivariate Analysis Of Variance</td>
</tr>
<tr>
<td>NVD</td>
<td>Natural Vaginal Delivery</td>
</tr>
<tr>
<td>PTSD</td>
<td>Post Traumatic Stress Disorder</td>
</tr>
<tr>
<td>SES</td>
<td>Self-Esteem Scale</td>
</tr>
<tr>
<td>SS</td>
<td>Social Support</td>
</tr>
<tr>
<td>SSQ</td>
<td>Social Support Questionnaire</td>
</tr>
<tr>
<td>SSQN</td>
<td>Social Support Questionnaire Number</td>
</tr>
<tr>
<td>SSQS</td>
<td>Social Support Questionnaire Satisfaction</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>WoCC</td>
<td>Ways of Coping Checklist</td>
</tr>
</tbody>
</table>
LIST OF ORIGINAL ARTICLES

The thesis is based on the following papers:


The original papers are reprinted here with permission from the publishers.

\(^1\) The text is translated in to English from the Farsi version of the article which is published in the Social Welfare Quarterly, 11 (41), 251-66.
ABSTRACT

**Introduction:** Generally, pregnancy is considered to be a positive period in life in Iranian culture. For the parents, it is important to have a healthy pregnancy and, as a result, a healthy child. A sufficient birth weight of the infant represents one of the crucial conditions of a healthy development of a child during infancy as well as later in life. Ongoing research has been carried out regarding various medical factors related to birth weight, but there is a gap in knowledge about psychosocial factors such as social support, coping, self-esteem, stress and mother’s mental health, and various socio-demographic factors including domestic violence, which may lead to adverse pregnancy outcomes such as low birth weight. This thesis aims to provide knowledge to fill this gap.

**Methods:** A cross-sectional survey was conducted in Tehran, Iran, including 600 young mothers who had delivered in Akbarabadi hospital, one of the main gynaecological hospitals affiliated with Tehran University of Medical Sciences. The investigation included a self-developed socio-demographic form, the Social Support Questionnaire, the Ways of Coping Checklist, Rosenberg’s Self-Esteem Scale, the General Health Questionnaire-12, and a Life Event Checklist.

**Results:** We could not find a significant association between birth weight and mother’s level of education, and there was no substantial relationship between general mental health and birth weight. Verbal abuse was reported by 26.0% of the young mothers, 4.8% reported physical abuse, 5.5% reported sexual abuse, and 1.3% reported all three types of abuse. The abuse-index was significantly negatively associated with satisfaction with social support and with self-esteem. The higher the abuse-index, by trend, the lower was the infants’ birth weight. Weight before pregnancy, current weight, weight gain during pregnancy, and the number of prenatal care visits were significantly positively associated with the weight of the newborn. Mothers who reported having a history of a low birth-weight (LBW) child or were physically abused during pregnancy had infants with significant lower birth weight. The more the pregnant women were satisfied with their social support and the more often they used positive reappraisal as a way of coping, the higher was their infants’ birth weight. The higher the self-esteem, the less often they used escape avoidance and confrontive coping.

**Conclusion:** The results suggest the importance of relationships between a healthy pregnancy and psychosocial as well as socio-demographic factors. Providing pregnant women with
social support is a key component for a healthy pregnancy, especially when faced with stressful situations. The number of people available for support did not provide a significant buffering effect on domestic violence (DV), but the perceived quality of social support did. Higher education in the mother and husband, and women’s employment represented protective conditions against the occurrence of DV. Women who reported physical abuse during pregnancy had infants with lower birth weight. Satisfaction with social support and use of positive reappraisal were significantly associated with higher birth weight.

**Keywords:** Pregnant women; Coping; Social support; Mental health; Stress; Self-esteem; Socio-demographic; Iran
## THESIS AT A GLANCE

<table>
<thead>
<tr>
<th>Article</th>
<th>Aim(s)</th>
<th>Data &amp; Method</th>
<th>Main Results</th>
</tr>
</thead>
</table>
| **I** A Farsi Version of the Social Support Questionnaire (SSQ) | To generate preliminary evidence for the reliability and validity of the Farsi version of the SSQ | - 270 individuals  
- Socio-demographic form; SSQ  
- T-test/ Mann-Whitney U-test  
- ANOVA/Kruskal-Wallis H-test  
- ANCOVAs  
- Spearman rho correlation  
- Exploratory factor analysis  
- Principal component analysis  
- Confirmatory factor analysis  
- Internal consistency | Cronbach’s alpha: SSQN= .95 and SSQS = .96.  
The more supporters the individuals reported, the more they were satisfied with the social support.  
Women showed a higher satisfaction with social support whereas there was no gender difference in SSQN.  
Individuals with a bachelor’s degree reported more supporting persons.  
There was no significant main effect for gender or marital status relating to the SSQN.  
Neither the number of reported supporting persons nor the satisfaction with social support was significantly associated with the age of the subjects. |
| **II** The Buffering Effect of Social Support between Domestic Violence and Self-Esteem in Pregnant Women in Tehran, Iran | (a) to investigate the prevalence of DV in pregnant women  
(b) to explore the impact of experienced DV on self-esteem  
(c) to explore the moderating impact of SS on the relationship between socio-demographic variables and self-esteem in pregnant women who have been exposed to DV | - 600 women in postnatal ward  
- Socio-demographic form; SSQ; SES  
- Spearman rho correlation  
- Mann-Whitney U-test  
- Kruskal Wallis H-test  
- Pearson correlation  
- ANOVA  
- MANOVA  
- Multiple regression | Verbal abuse= 26.0%, physical abuse= 4.8%, sexual abuse= 5.5%, no abuse at all= 71.8%, all three types of abuse= 1.3%.  
Women who experienced any type of violence did not significantly differ from those not abused on history of abortion, number of previous pregnancies, kind of last delivery, pregnancy care, smoking during pregnancy, pregnancy acceptance, average birth weight, number of low birth weight newborns, number of husbands with higher education than their wives, or number of wives with their own income.  
Women who experienced some kind of DV used more drugs during pregnancy, suffered from an iron deficiency; their husbands less often had their own income, more often smoked prior to the pregnancy, and had increased use of other tobacco products during pregnancy.  
The birth weight and the mother’s weight gain during pregnancy were significantly positively related to SSQS.  
The abuse-index was significantly negatively associated with SSQS and with self-esteem. |
### III
**Relationships between Life Events, Coping, Social Support, and Self-Esteem in Young Iranian Mothers in Tehran**

To investigate ways of coping that young pregnant Iranian women employ in stressful situations during pregnancy and the role of life stressors on ways of coping

- 600 women in postnatal ward
- Socio-demographic form; SSQ; SES; WoCC; GHQ-12; LEC
- Pearson correlation
- ANOVA
- MANOVA
- Multiple regression

A ‘sudden, unexpected death of a close person’ was most often reported, whereas ‘sexual assault’ was reported less often.
‘Life-threatening illness or injury’ had the highest stressful impact, whereas ‘exposure to toxic substance’ was rated lowest.
The more stress because of ‘divorce’ the more they used ‘positive reappraisal’ and less ‘confrontive coping’.
The more the stressful experience of ‘fire or explosion’ or ‘physical assault’, the less they used ‘escape avoidance’ and ‘distancing’.
The higher the SSQN, the more they applied ‘planful problem-solving’, ‘seeking social support’, ‘escape avoidance’, ‘distancing’, and ‘self-control’, whereas SSQS was positively correlated with all coping factors except for ‘escape avoidance’ and ‘positive reappraisal’.
The higher the self-esteem, the less ‘escape avoidance’ and ‘confrontive coping’ was employed.
The higher the SSQN the less stressful impact of a ‘fire or explosion’ and ‘sudden, unexpected death of a close person’, whereas the higher the SSQS the higher stressful impact of a ‘transportation accident’ or ‘sudden, unexpected death of a close person’.

### IV
**Birth weight, domestic violence, coping, social support and mental health of young Iranian mothers in Tehran**

To evaluate the relationships between socio-demographic variables, DV, coping, SS, and general mental health of young women living in Tehran, during pregnancy and infants’ birth weight

- 600 women in postnatal ward
- Socio-demographic form; SSQ; SES; WoCC; GHQ-12; LEC
- T-test
- Spearman rho correlation
- Multiple regression

No significant association was found between birth weight and mother’s education and mental health score.
The more severe was any abuse during pregnancy, the younger the women were, the younger they were married the less weight gain during pregnancy, the younger was the gestational age, and the lower was the birth weight.
Weight before the pregnancy, the increase in weight, and the number of prenatal care visits was significantly positively associated with birth weight.
Those with a history of LBW had significantly lighter infants.
The more SSQS and the more often they used ‘positive reappraisal’ the higher was the weight of their newborn baby.
INTRODUCTION

Women’s life in Iran

In Iranian culture, marriage is the only acceptable condition for sexual relationships, and it is a cause for permanent, lifelong relations that bind couples and their families. Pregnancy is a normal part of many women’s lives. During this time, women encounter psychological, physical, social, and cultural role changes (Klossner, 2006; Ricci, 2007). Many aspects of physiological changes during pregnancy are similar for many women. Generally, pregnancy is seen as a positive period in life in Iranian culture, especially when parents have planned for it. Usually, women receive more support and kindness from husbands and relatives during pregnancy.

In traditional Iranian families, the first and most important roles for women are ‘housewifery and motherhood’. The primary duty that is expected of women after a marriage is to become pregnant. In low socioeconomic status families, although parents may not be able to supply their children with food and money, but women are still expected to become pregnant, especially if they do not have a son yet. Furthermore, a woman often continues to become pregnant until being recommended from the health care staff to undergo a tubectomy, although the family (husband or parents) often do not let her to do that. The role of the mother is highly important in Iran, and mothers are expected to breast-feed their babies and keep their children safe in all situations.

Generally, like in most patriarchal families, men are responsible for earning money, while women are responsible for child-rearing and household maintenance. Recently, this condition has changed due to the increasing number of women with higher education and the worsening economic situation that has forced women to work (Price, 2006). The increasing number of female students with higher education in Iran (Statistical Centre of Iran, 1997) improves women’s chances of getting better jobs with higher status. At the end of the 1970s, about 5% of employed women were university educated, compared to more than 22% today. The increasing number of employed women with a university degree represents a sign of their eagerness to participate at the labour market (Shaditalab, 2006).

The increasing number of female students with higher education in Iran (Statistical Centre of Iran, 1997) improves women’s chances of getting better jobs with higher status. At the end of the 1970s, about 5% of employed women were university educated, compared to more than 22% today. The increasing number of employed women with a university degree represents a sign of their eagerness to participate at the labour market (Shaditalab, 2006).

There is a conflict between women’s high education and their work because the society still has not fully accepted women working outside the home. Women’s lives in Iran are still affected by men’s decisions. Women’s participation in the labour market is not wanted yet in traditional families (Ahmad-Nia, 2002), but working has increasingly become important for women.
In modern families, although pregnancy still is considered a positive life event, the age of the mothers at their first pregnancy may be higher since the women are more highly educated. There is a relationship between female education and women’s employment, their age of marriage and their participation in the society. In these families, parents usually plan for their pregnancy to prevent a conflict with their work or education. In one study, Ahmad-Nia (2002) compared two groups of working and non-working women in Tehran. The mean age of marriage for the working group was 22 years, whereas for the non-working group, it was 18.7 years. The mean age at first pregnancy was 23.9 years for the working group, whereas for the non-working group, it was 20.5 years. The mean number of years of education for the working group was 12.9 years and for the non-working group were 9.5 years.

Although women who work have larger social networks, higher self-esteem, fewer economic problems, and feel more worthy, they may perceive more stress, have more duties, and sometimes their husbands may not accept their work, especially in traditional Iranian families where the most important duties expected of women are being mothers and housewives.

Several investigations have been performed on various conditions in Iranian women’s lives. In a study by Ahmad-Nia (2002) about Iranian women’s health, she found that women, who received Social Support (SS), had higher self-esteem, were economically self-reliant, and reported better mental health. Additionally, she found that women living in poorer socio-economic conditions reported having more children, more duties, higher stress, and poor mental health. Hygiene and medical services are key factors in all countries and are affected by the economic, social, and cultural level of a society. A developed society improves the health of its members and provides equal access to hygienic medical services, good nutrition, and education. Unequal access to the medical services, especially lack of midwives that play the main role in saving pregnant mothers, could contribute to difficulties that occur during delivery and consequently increase maternal mortality rate (Avaz zadeh, 2009).

There have been several investigations on pregnant Iranian women’s perception of pregnancy and the difficulties that they encounter while pregnant. In a qualitative study about experiences of pregnant Kurdish women in Iran, women explained how they perceived their pregnancy. They were very concerned with the physical and psychological effects of pregnancy, interactions with their husband, their babies, and their relatives (Shaho, 2010). Of course, cultural differences, behavioural factors, and personal variables influence women’s experience of pregnancy and the difficulties that they may encounter.
Women’s education and activities outside the home help reduce child and maternal death rates, increase marriage age, increase birth intervals, delay the first child’s birth, increase life expectancy, and improve the quality of child care (Iravani, 2012). All in all, these factors contribute to better health for women during their reproductive years.
Rational of the study

Most studies on psychosocial factors, such as social support, coping, and self-esteem, which have an effect on women’s health issues and infants’ birth weight, have been carried out in developed countries. There is a lack of knowledge about these issues in Iran. Some recommendations for the prevention of negative outcomes in pregnancies may not be suitable for Iran because of cultural differences. Considering these differences, an essential question that arises at this point is: what strategies in preventing low birth weight babies are the most effective for Iranian women?

According to the World Health Organization’s Webpage, ‘Feto-maternal nutrition and low birth weight’ (2012), low birth weight (LBW) is a major factor causing mortality, morbidity, and disability in early childhood, as well as negative health outcomes in adulthood. Low birth weight also increases costs for the health care sector and causes a significant burden on society.

Whereas the worldwide prevalence of LBW is slowly decreasing, it is as high as 30% in many developing countries. Because of the importance of LBW as a global health problem, more national studies, especially in Iran, are considered as important. The results of such studies can help to provide an overview about psychosocial risk factors in pregnancy, the mediating role of social support, coping, and self-esteem, and the risk of LBW.
AIMS AND OBJECTIVES

The overall aim of this thesis is to explore the relationships between socio-demographic variables, domestic violence, coping, social support, self-esteem, and general mental health of young women during pregnancy, living in Tehran, and infants’ birth weight. Providing a reliable and validated Farsi version of the Social Support Questionnaire was an additional goal. Four investigations were performed with the following aims:

- To generate preliminary evidence for the reliability and validity of the Farsi version of the Social Support Questionnaire (Sarason, Levine, Basham, & Sarason, 1983) (Paper I).
- (a) To investigate the prevalence of domestic violence (DV) in pregnant women in Tehran; (b) to explore the impact of experienced DV on self-esteem among these women; and (c) to explore the moderating impact of social support on the relationship between several socio-demographic variables and self-esteem in pregnant women who have been exposed to DV (Paper II).
- To investigate ways of coping that young Iranian mothers employ in stressful situations which they experience during pregnancy and the role of life stressors on the ways of coping (Paper III).
- To evaluate the relationships between socio-demographic variables, domestic violence, coping, social support and the general mental health of young mothers living in Tehran during pregnancy and infants’ birth weight (Paper IV).
CONCEPTUAL FRAMEWORK

In recent years, improved diagnosis and management of obstetric complications have made a major contribution in the reduction of adverse birth outcomes such as LBW. A birth weight of less than 2500g— the definition of LBW accepted internationally based on WHO guidelines (1961)—represents one possible serious consequence of the various risk factors during pregnancy that, in turn, are risk factors for the baby’s development as well as major predictors of infant mortality (Valero de Bernabé et al., 2004). Various investigations have established links between LBW and problems in pulmonary function, physical growth, neurological outcomes, psycho-social development, and social disadvantages (Gissler, Rahkonen, Järvelin, & Hemminki, 1998) as well as problems pertaining to school performance and emotional well-being (Cheung, 2002).

According to the WHO’s Webpage ‘Maternal, newborn, child and adolescent health’ (2012), the global prevalence of LBW is 15.5%, suggesting that about 20 million LBW babies are born worldwide every year, 96.5% of whom are born in developing countries. The rate of LBW in Iran in 2005-2009 was 7% (United Nations Children’s Fund, 2011).

It is suggested that a significant proportion of the adverse birth outcomes can be explained by psychosocial factors in pregnant women such as maternal mental health state, stress (caused by life events including domestic violence) and the role of social support, ways of coping, and self-esteem. These factors were selected as variables of interest because they have been implicated in adverse pregnancy outcomes in previous studies. The mediating role of some of these factors was also investigated.

To contextualize these variables, it could be hypothesized that women with a higher number of supporting persons and higher quality of social support may encounter less domestic violence, have higher self-esteem, have better mental health, and are able to cope more effectively with stressful life situations. A person’s access to social support is thought to moderate the effects of stress. Social support may affect health by facilitating the use of particular coping strategies which, in turn, reduce distress and increase health. Social support may affect birth weight directly or indirectly through these variables.

Health and mental health status in Iranian women

Half of the world’s population consists of women, whose health affects their communities. According to the WHO’s conference on health promotion in 1986, “health is not just a state, but also a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities”.

6
Mental health refers to different activities which relate to the mental well-being components included in the WHO’s definition of health that includes mental health: “A state of complete physical, mental and social well-being, and not merely the absence of disease” (2012).

Generally, women’s health is one of the important components for the formation of a healthy community. One of the most important indicators of women’s health is the maternal mortality rate. In Iran, this rate decreased from 120 per 100,000 live births in 1990 to 48 per 100,000 live births in 2000 and to 21 per 100,000 live births in 2010 (WHO, 2012). Life expectancy for women in 1990 was 66 years and it has increased to 75 years in 2009. Investigations on Iranian women’s mental health showed that depression was higher in women than men in all parts of Iran (4.3% versus 1.5%) which is similar to international findings (Mohammadi et al., 2005; Noorbala, Bagheri Yazdi, Yasamy, & Mohammad, 2004).

In a national study on the prevalence of mental health problems in Iran, Mohammadi et al. (2005) found that the overall prevalence of psychiatric disorders was 10.8%, with women suffering nearly twice as often from any psychiatric disorder than men (14.34% vs. 7.34%). Furthermore, the prevalence of mental disorders in Kurdistan, one of the provinces in the west of Iran, was 21.3% in rural areas and 20.9% in urban areas (Mofidi, Ghazinour, Araste, Jacobsson, & Richter, 2008). In this study, the more the individuals described having the capability to overcome problems, the better their reported general mental health, quality of life, and health conditions. In a recent study in the north-western part of Iran, 9.7% of 17-24 years-old individuals suffered from mental disorders such as anxiety, depression, and nervousness. The number of cases increased with increasing age, and women showed psychological disorders 2.7 times more often than men (Fakhari, Ranjbar, Dadashzadeh, & Moghaddas, 2007).

Stress is widely recognized as a negative health issue. Special care should be taken to reduce it during pregnancy to prevent negative birth outcomes. A more comprehensive understanding of how resources and coping can cause a reduction of distress may help moderate and prevent such outcomes. Thus, it is important to consider social factors that may decrease stress during pregnancy and, as a result, improve the psychological well-being of mothers, as well as improve pregnancy outcomes. Coping strategies and social support are important resources for adjustment to stressful events (Spaccarelli, 1994), and self-esteem enables people to suffer less from the impact of stressful life events (Arndt & Goldenberg, 2002). These resources will further be explained in this thesis.
Experience of domestic violence by young Iranian women

The World Health Organization defined domestic violence (DV) as the “range of sexually, psychologically, and physically coercive acts used against adult and adolescent women by current or former male intimate partners” (1997, p. 5). DV during pregnancy is a global social problem due to its potential to physically and psychologically harm a woman and her fetus (O’Reilly, Beale, & Gillies, 2010). DV during pregnancy represents one of the important factors leading to LBW. It produces psychological stress, which has been linked to negative health outcomes during pregnancy. For example, women who had high levels of psychological stress during pregnancy had preterm birth more often and their babies were more often of low birth weight, even after adjustment for effects of biomedical, socio-demographic and behavioural risk factors (Lobel, 1994; Stanton, Lobel, Sears, & DeLuca, 2002; Wadhwa, Culhane, Rauh, & Barve, 2001).

Pregnancy gives an opportunity for DV screening. Research indicates that 4% to 29% of women experience DV during pregnancy in developing countries (Fikree & Bhatti, 1999; Hegarty & Roberts, 1998; Nasir & Hyder, 2003). Iran shares the widespread social problem of high incidence of DV with developed countries. In a study of 1,800 pregnant women in six Hospitals in Tehran that all belong to the Tehran University of Medical Sciences, Jahanfar and Malekzadegan (2007) found that multiple types of DV were experienced by 60.6% of women, including psychological (60.5%), physical (14.6%), and sexual (23.5%) violence. In a prevalence study of DV in the southern part of Iran, the prevalence of abuse during pregnancy (42%) was found to be lower than during the one year before pregnancy (51.7%) or after delivery (53.5%). The overall prevalence of emotional abuse, sexual abuse, and physical abuse was 53.5%, 34.7%, and 26.7%, respectively (Mohammadhosseini, Sahraean, & Bahrami, 2010).

Social support

The eagerness for research on social support as a coping resource started in the middle of the 1970s. Several investigations have found that adequacy of social support is directly related to severity of psychological and physical symptoms reported by individuals, and that social support also represents a buffer between stressful life events and psychological distress (Sarason et al., 1983; Wilcox, 1981; Zimet, Dahlem, Zimet, & Farley, 1988). Social support is believed to improve coping strategies, whereas the belief that support is available can lead to the perception of situations as less stressful (Lakey & Cohen, 2000). This view is related to research and theory on stress and coping (Lazarus & Folkman, 1984). Cohen and Hoberman
(1983) hypothesized that the “belief that support is available reduces the effects of stress by contributing to less negative appraisals”.

Social support has been defined as “an exchange of resources between at least two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient” (Shumaker & Brownell, 1984, p.13). Lin defined social support as “perceived or actual instrumental and/or expressive provisions supplied by the community, social networks, and confiding partners” (1986, p.18).

Tardy (1985) argued that one way to explain differences in meaning of social support is to look at the direction of the event (Can support be given and/or received?), disposition (Are support resources available or utilized?), description of support versus evaluation of satisfaction with support, content (What form does the support take?), and network (What social system or systems provide the support?).

Social support has two fundamental components: the number of available persons that one can rely on at the time of need, and the level of satisfaction an individual has with the support. Satisfaction with social support is affected by personality factors such as self-esteem and a feeling of control over the environment (Sarason et al., 1983).

The most powerful theoretical perspective on social support is that social support can make effects of stress on health caused by life events and daily hassles to be less influential, acting as a stress buffer. This can be due either to the supportive actions or to the perception that support is available.

Social support was found negatively related to adverse pregnancy outcomes, and it improved pregnancy outcomes either by buffering the effects of stress or by directly improving women’s mental health (Orr, 2004). Emmanuel, St John, and Sun (2012) investigated demographic and social support predictors of health-related quality of life (HRQoL) (mental and physical) in the prenatal period. They found that social support (SS) was a significant predictor of higher HRQoL scores 12 weeks following childbirth and during the prenatal period. They suggested that midwives should measure social support during the prenatal period.

Self-esteem

Self-esteem is defined as how much value people place on themselves. It is an evaluative part about self-knowledge. High self-esteem indicates a high evaluation of the self. Low self-esteem indicates an unfavourable evaluation of the self. Self-esteem represents the perception and evaluation of the self rather than reflecting some objective reality (Baumeister,
Campbell, Krueger, & Vohs, 2003). People who have low self-esteem complain more about negative social relations, report more stressful life events, and less social support compared to those with high self-esteem.

Individuals with high self-esteem can manage highly stressful situations better than those with low self-esteem. This buffering effect of high self-esteem supports the idea that high self-esteem helps individuals cope more adequately with stress. However, self-esteem is neither a predictor nor cause of almost anything. The effects of self-esteem are usually bound up with the effects of other factors, so if it shows any relationships, it is usually indirect (Baumeister et al., 2003). High self-esteem is a resource that helps individuals suffer less or to get well more quickly after stressful events. Those with high self-esteem are usually engaged in healthy behaviours, can cope better during stressful life events, perceive more social support, and are more satisfied with their social support. All of these variables contribute to less stress and increase psychological well-being, which can contribute to fewer adverse pregnancy outcomes.

**Coping**

Lazarus and Folkman (1984) introduced a transactional model of stress and coping, defining stress as a relationship between a person and the environment with four key elements in the stress process: stressors, the environment, the person, and the outcome. The interaction between these components causes psychological stress. There are two processes that mediate the person-environment relationship: cognitive appraisal and coping. Cognitive appraisal is “a process through which the person evaluates whether a particular encounter with the environment is relevant to her or his well-being and in what ways”. Coping is “the process through which the individual manages the demands of the person-environment relationship that are appraised as stressful and the emotions they generate” (Lazarus & Folkman, 1984, p.19). The two components of cognitive appraisal are primary and secondary appraisal. Primary appraisals evaluate the event as a threat or not (‘am I in trouble?’). Secondary appraisals are evaluation of resources available to help one cope with the event (‘what can I do about it?’).

According to Lazarus and Folkman (1984), there are three kinds of primary appraisals: Irrelevant (when there is no implication for the individual’s well-being), Benign-Positive (when a positive outcome is expected), and Stressful (when there is a probability of harm/loss, threat, or challenge).
Coping is a shifting process, which means that an individual at certain times relies more intensely on one or another type of coping, such as on problem-solving strategies based on changes in the person-environment relationship. Shifts may be due to the coping efforts, or may be caused by varying interpretations of an event. In shifting processes in the relationship between a person and the environment, an individual will reappraise the event with a different evaluation of the importance of the event and a different view about what can be done. This reappraisal in turn influences coping efforts.

The ways people cope depends on the resources that are available to them. One important psychological resource for coping is viewing oneself positively. Others include problem-solving skills, social skills, social support, and material resources (Lazarus & Folkman, 1984). Coping has two important functions: control of emotions or distress (emotion-focused coping) and management or elimination of the problem that is causing the distress (problem-focused coping). Based on findings by Folkman and Lazarus (1980), in most stressful situations both forms of coping are used; and the rate of using each type varies depending on how the encounter is appraised. Lazarus and Folkman (1984) suggested that effective coping represents a key factor related to the impact of perceived stress on psychological consequences. Effective coping, which often is problem-focused coping, will end-up in “[managing] situations in a way such as to mitigate stress when it occurs” (p. 198). Based on Lazarus and Folkman’s theoretical model, problem-focussed way of coping buffers the impact of stress by affecting a person’s correct assessment of available coping resources, and using special coping efforts that lessen the intensity of stress.

**Life events**

Exposure to potentially traumatic events usually is linked with psychological and emotional distress. An event is thought to be traumatizing if one “experiences, witnesses, or confronts a situation that involves actual or threatened death or serious injury to oneself or others and if it elicits a response of intense fear, helplessness, or horror” (American Psychiatric Association, 1994). An individual, who encounters such an event, may experience a traumatic stress reaction, including an increased psychological arousal, a variety of negative affective states, and strong perceptions of vulnerability, or loss of control (Herman, 1992). Psychological stress represents “a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being”.

11
MY POINT OF DEPARTURE FOR INVESTIGATION

Pregnancy is a time of happiness as well as challenges for most women. Women experience normal physical and psychological changes during this time. Being in the state of pregnancy, even if perceived as a positive life event, a woman still is in a vulnerable situation. Because of this vulnerability, women need more emotional, informational, and tangible support from those who are emotionally significant to them, as well as from society in terms of having access to health care facilities.

As a midwife, I have been working in the health care setting for several years and have met many women during the course of their pregnancies. I received my education on the medical aspects of pregnancy and physiological changes, and I have had ‘medical lenses’ in front of my eyes during these years. I have been in contact with pregnant women who have been exposed to domestic violence more and more often. The stories and the behaviour of women who have been exposed to psychological or physical abuse made me think more about the impact of DV on vulnerable women. Many questions have gone through my mind. When I met some of these women, I was given the impression that they just accepted the abuse. Once when I asked, ‘What has happened to you? Why do you have a bruised face?’ one woman just laughed and said, ‘This is life’. Another woman cried and said, ‘I do not know where I can go, where I can receive support’.

As a midwife, knowing that pregnancy is an extremely sensitive time in a woman’s life, especially regarding the birth of a child, I became more and more interested in studying psychosocial factors among pregnant women. Iranian women’s health issues are very complex, especially for women of low socio-economic status, mostly due to the social-political and social-economic situation in Iran. However, I believe that increased knowledge about psychosocial factors related to pregnant women in Iran and the role of mediators will help me and my co-workers to better understand the state of pregnant women, especially in professional meetings. There have been many investigations of women’s mental health in Iran (Noorbala et al., 2004; Khodarahimi, Khajahe, Sattar, & Rsti, 2009), education (Ahmad-Nia, 2002; Moinifar, 2011), and marital satisfaction (Honarian, Younesi, Shafiebadi, & Nafissi, 2010; Nezhad & Moazami Ghodarzi, 2011). However, there are only a few investigations about pregnant women focussing on social and psychological factors. My point of departure for this study is my curiosity about these psychosocial factors among pregnant women. Furthermore, I would like to integrate more social-psychological knowledge into my medical experience. The conceptual framework, which I try to refer to in my investigations, is illustrated in Figure 1.
Figure 1. The impact of psychosocial factors; mediated by social support, coping, and self-esteem on pregnant women’s health and infants’ birth weight.
MATERIAL AND METHODS

Overall research design

For the evaluation of psychometric properties of the Social Support Questionnaire, a convenient sample of 270 individuals aged 18-65 was recruited from two English language institutions and from the Ministry of Health and Medical Education in Iran.

For the other three investigations, the data were collected from Akbarabadi Hospital, one of the main gynaecological teaching hospitals affiliated with Tehran University of Medical Sciences. The sample comprises 600 mothers aged 15-29 years, who completed a questionnaire-set after giving birth.

All four articles are based on a comprehensive cross-sectional study that was conducted in Tehran with data collection taking place from June 2009 to November 2010. All statistical analysis were performed using SPSS version 17.0 for Windows.

Two midwives were trained in administering the investigation and assisted in data collection. The inclusion criteria for this investigation were: (a) admission to a postpartum ward of Akbarabadi Hospital; and (b) being 15-29 years old. Exclusion criteria were: (a) preterm delivery; and (b) occurrence of any physical disease of the mother prior to or during pregnancy that may have caused low birth weight such as diabetes, high blood pressure, protein urea, iodine deficiency, lung diseases, and infectious diseases. The midwives tried to provide a peaceful environment and to develop a relationship of trust. The time for asking the mothers to complete the questionnaires was chosen in a way that participants would feel as little disturbed as possible. When women were breastfeeding or were in pain, the midwives asked them to stop answering the questions. The aim of the study was described at the beginning of a session. The questionnaires were explained in detail including a definition of physical, verbal, and sexual violence, and an informed consent form was signed before inclusion in the study. Participation was voluntary, confidentiality was assured by anonymous completion of the questionnaires, and the investigation was approved by the Ethics Committee of the Medical School of Tehran University of Medical Sciences.

The context of the study

The investigation took place in Tehran (population: about 12 million). The respondents were recruited from Akbarabadi Hospital which is a University hospital. This hospital was established on 21 March 1941. Approximately 10,000 deliveries occur each year in this hospital. In recent decades, people from poor socioeconomic backgrounds have used this hospital for delivery. Generally, women without any medical complications and normal
vaginal delivery (NVD) usually stay for one night; if they have a caesarean section (C/S), they stay for two nights in a postpartum ward. However, if any complications arise with the mothers or their infants, then they may stay in hospital longer, based on the decision of a physician.

Pregnant women have two options for their prenatal care: governmental health care centres or private gynaecologists or midwives. Care at governmental health care centres is free of charge, and the midwives provide routine check-ups. Women living in low socioeconomic conditions usually apply for governmental prenatal care, but those with high-risk pregnancies or complications will be referred to a private gynaecologist or to the hospital. In the private sector, charges by gynaecologists are higher than by midwives. In all hospitals, there is a Social Work Ward. In Akbarabadi Hospital—since it is a governmental hospital—families usually get economic support from the Social Work Ward of the hospital if they apply for help; but this is not the case in private hospitals. Unfortunately, the Social Work Ward in Akbarabadi Hospital must deal with many patients with economic problems. When I asked about the Ward’s responsibilities concerning women who have been victims of domestic violence or other social problems, they replied that they have too much to do to be able to deal with such problems.

**Questionnaires**

**Socio-demographic form:**

This form consists of several items related to maternal age, history of smoking, history of previous pregnancies, mother’s and husband’s educational and occupational level, prenatal care, occurrence of abuse (physical, verbal, or sexual), major events during pregnancy, and residential status. Verbal abuse was defined as the use of words to cause harm to the person being addressed. Physical violence referred to the use of physical force against another person resulting in physical, sexual, or psychological harm, including beating, kicking, slapping, stabbing, shooting, pushing, biting, and/or pinching. Sexual abuse was defined as any unwanted, unreciprocated, and unwelcomed behaviour of a sexual nature that is offensive to the person involved, and causes that person to feel threatened, humiliated, or embarrassed.

**Social Support Questionnaire (SSQ):**

The SSQ (Sarason et al., 1983) is a self-report questionnaire consisting of 27 scenarios. In relation to each scenario, respondents are asked: (a) to report any persons who would be accessible for support in that circumstance; and (b) how satisfied the respondent would be
with the available support for that specific situation on a six-point Likert scale ranging from 1 (very dissatisfied) to 6 (very satisfied). Two scores are obtained from this questionnaire: the average number of available supportive individuals (Social Support Questionnaire Number – SSQN) and the average satisfaction with the available SS (Social Support Questionnaire Satisfaction – SSQS). The validity and reliability of the Farsi version of the SSQ was investigated and reported to be satisfactory for application in research with Cronbach’s alpha of SSQN = .95 and of SSQS = .96 (Nasseh Lotf Abadi, Ghazinour, Joghataie, Nojomi, & Richter, 2011).

**Self-Esteem Scale (SES):**

The Self-esteem Scale was developed by Rosenberg in 1965. Internationally, the SES is one of the most often used methods to assess self-esteem. Its application was suggested by Bowling (2004) because it is a short scale and is easy to complete. It consists of 10 items, and individuals are asked to answer each item on a four-point Likert scale ranging from 0 (strongly agree) to 3 (strongly disagree). By means of this scale, high self-esteem is defined as self-admiration and a high feeling of self-worth. Low self-esteem reflects self-denial, unhappiness with oneself, and lack of self-respect. Rosenberg (1965) showed that its reliability in terms of Cronbach’s alpha ranged between .77 and .88, which must be regarded as good. Psychometric properties of the Farsi version of the SES were investigated, and its internal consistency in terms of Cronbach’s alpha of .82 was satisfactory, test-retest reliability in a three-week retest-interval (r = .84) suggested a high stability of the scores, and correlations between scores of the scale and criterion measures supported its concurrent validity (Shapurian, Hojat, & Nayerahmadi, 1987).

**Ways of Coping Checklist (WoCC):**

This checklist consists of 66 statements which indicate the thoughts and behaviours that people use to deal with recently experienced stressful situations. The items are to answer on a four-point Likert scale (0= does not apply and/or not used; 1= used somewhat; 2= used quite a bit; 3= used a great deal). The instrument was developed by Folkman and Lazarus (1988) based on their coping behavior theory and the items are grouped into eight coping scales (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986):

1-  **Confrontive coping:** Describes a degree of animosity (e.g., ‘I expressed anger to the person(s) who caused the problem’) and exposing to risk (e.g., ‘Took a big chance or did something very risky’, ‘I did something which I didn’t think would work, but at
least I was doing something’). It also describes assertive efforts to modify the situation (e.g., ‘Stood my ground and fought for what I wanted’, ‘Tried to get the person responsible to change his or her mind’).

2- **Distancing**: Describes efforts of a person to remove herself/himself from stress (e.g., ‘Didn’t let it get to me’, ‘Refused to think about it too much’, ‘Tried to forget the whole thing’). The other main idea is providing a positive perspective (e.g., ‘Made light of the situation’, ‘Refused to get too serious about it’, ‘Looked for the silver lining’, ‘Tried to look on the bright side of things’).

3- **Self-controlling**: Describes attempts to manage one’s feelings (e.g., ‘I tried to keep my feelings to myself’, ‘kept others from knowing how bad things were’) and actions (e.g., ‘Tried not to burn my bridges, but leave things open somewhat’, ‘I tried not to act too hastily or follow my first hunch’).

4- **Seeking social support**: Describes attempts to seek tangible support (e.g., ‘Talked to someone who could do something concrete about the problem’), informational support (e.g., ‘Talked to someone to find out more about the situation’), and emotional support (e.g., ‘Accepted sympathy and understanding from someone’).

5- **Accepting responsibility**: Understanding one’s own position related to the problem (e.g., ‘Criticized or lectured myself’, ‘Realized I brought the problem on myself’) and effort to put things correctly (e.g., ‘I apologized or did something to make up’, ‘I made a promise to myself that things would be different next time’).

6- **Escape-avoidance**: Describes wishful thinking (e.g., ‘Wished that the situation would go away or somehow be over with’) and behavioural attempts to escape or avoid (e.g., ‘Tried to make myself feel better by eating, drinking, smoking, using drugs or medication, etc.’, ‘Avoided being with people in general’, ‘Slept more than usual’).

7- **Planful problem-solving**: Describes attempts which are based on problem-focussed coping to manage the situation (e.g., ‘I knew what had to be done, so I doubled my efforts to make things work’), and attempts which are linked with an analytic effort to solve the problem (e.g., ‘I made a plan of action and followed it’, ‘Came up with a couple of different solutions to the problem’).

8- **Positive reappraisal**: Describes attempts to make positive meaning by concentration on personal growth (e.g., ‘Changed or grew as a person in a good way’, ‘I came out of the experience better than I went in’). This scale also has religious notes (e.g., ‘Found new faith’, ‘I prayed’).
Psychometric properties and applicability of the WoCC for use in the Iranian population was tested by means of confirmatory factor analysis (Padyab, Ghazinour, & Richter, 2012), and was shown to have good psychometric properties for use in Iranian society. In this adjusted WoCC version, seven coping items with the ‘Accepting Responsibility’ scale were dropped from the original version.

Life Event Checklist (LEC):

The Life Event Checklist was developed at the National Center for Post-Traumatic Stress Disorder (PTSD) in the USA. This paper-and-pencil questionnaire measures exposure to potentially traumatic events and is an effective means of screening for important events throughout a respondent’s lifetime. It is a checklist to evaluate a respondent’s experience of a broad range of traumatic experiences (Gray, Litz, Hsu, & Lombardo, 2004). The original version was previously tested for reliability and validity, and its psychometric properties were shown to be appropriate. It consists of 17 items about the experience of different potentially traumatic events that are known to represent possible causes of post-traumatic stress disorder or other post-traumatic problems. The participants answer the questions based on their own experience or having been a witness of that special event (Gray et al., 2004). We made some minor changes to this questionnaire to adapt it for use in our study in an Iranian context: a) two events (other unwanted sexual experience and severe human suffering) were deleted from the original; b) the item ‘other very stressful event’ was replaced by ‘divorce’ because of the high prevalence of divorce in Iranian society; and c) in order to gather some information about the perceived severity of stress we changed the alternate response model into a 11-point scale from 0 = not stressful at all to 10 = extremely stressful.

General Health Questionnaire (GHQ-12):

This questionnaire developed by Goldberg and Williams (1988) is a screening instrument used to detect psychiatric disorders in community settings and non-psychiatric clinical settings (John, Vijaykumar, Jayaseelan, & Jacob, 2006). The questionnaire was translated into Farsi and its psychometric properties were investigated (Cronbach’s alpha coefficient = .87) (Montazeri et al., 2003). The GHQ-12 is scored in this study as recommended by Goldberg with response categories ‘not at all’ and ‘no more than usual’ as 0 and ‘rather more than usual’ and ‘much more than usual’ as 1, providing a possible range of 0 to 12 with high scores indicative of probable mental health problems.
Statistical analysis

Paper I

The data were tested for normal distribution by one-sample Kolmogorov-Smirnov Z-test. In order to compare mean scores concerning variables with two categories, T-test (continuous, normally distributed data) and Mann Whitney U-test (non-parametric data) were used, and univariate analysis of variance (ANOVA) or Kruskal-Wallis H-test were applied when more than two groups had to be compared. ANCOVAs and Spearman rho correlation were calculated. Exploratory factor analysis, a principal component analysis with a varimax rotation, was calculated in order to investigate the structure in the data. In order to test the fit of the structure of the data to the theoretical model, a confirmatory factor analysis was performed by Mplus. Internal consistency was investigated in terms of Cronbach’s alpha score.

Paper II

Percentages were reported relating to the experience of various types of abuse. Since the factor scores of self-esteem, available supportive individuals, and satisfaction with SS were not normally distributed, Spearman rho correlation coefficients, Mann-Whitney U-test, and Kruskal-Wallis H-test, and τb were used. To analyse the impact of overall abuse, an abuse-index was built by summing the three assessed types of abuse with different weights for the various types (verbal abuse = 1, physical abuse = 2, and sexual abuse = 3, assuming that sexual abuse occurs often in combination with physical abuse). Educational level was categorized as two groups: those with less than a high school diploma and those with a high school diploma or higher education.

Paper III

Absolute and relative frequencies of life events were reported. Pearson correlation coefficients were calculated to test for associations between continuous variables. Univariate and multivariate analysis of variance (ANOVA/MANOVA) were performed for continuous variables relating to differences between groups. Multiple regression analysis were calculated to test for predictors of stressful impacts of particular life events with coping factors, social support indicators, and the self-esteem score as independent variables. The significance level was corrected for multiple testing per Bonferroni.
Paper IV

T-test or univariate analysis of variance (ANOVA) was calculated to test for differences between groups. Spearman rho correlation was used to analyze association between continuous variables. A hierarchical multiple regression analysis was calculated to evaluate the predictive impact of the various independent variables, such as socio-demographic variables, social support factors, and coping factors.
<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Mean (SD)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15≤age&lt;20</td>
<td>24.0 (3.20)</td>
<td>9.0</td>
</tr>
<tr>
<td>20≤age&lt;25</td>
<td></td>
<td>43.7</td>
</tr>
<tr>
<td>≤25age≤29</td>
<td></td>
<td>47.3</td>
</tr>
<tr>
<td><strong>Duration of marriage</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>duration ≤1</td>
<td>4.36 (3.28)</td>
<td>21.0</td>
</tr>
<tr>
<td>1&lt;duration≤5</td>
<td></td>
<td>46.5</td>
</tr>
<tr>
<td>5&lt;duration≤10</td>
<td></td>
<td>27.4</td>
</tr>
<tr>
<td>duration&gt;10</td>
<td></td>
<td>5.1</td>
</tr>
<tr>
<td><strong>Type of delivery</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NVD</td>
<td></td>
<td>29.8</td>
</tr>
<tr>
<td>C/S</td>
<td></td>
<td>70.2</td>
</tr>
<tr>
<td><strong>Mothers’ highest degree</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degree≥Diploma</td>
<td></td>
<td>50.6</td>
</tr>
<tr>
<td>Degree&lt;Diploma</td>
<td></td>
<td>49.4</td>
</tr>
<tr>
<td><strong>Mothers’ employment status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working</td>
<td></td>
<td>4.7</td>
</tr>
<tr>
<td>Not working</td>
<td></td>
<td>95.3</td>
</tr>
<tr>
<td><strong>Residency type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner</td>
<td></td>
<td>14.9</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>85.1</td>
</tr>
<tr>
<td><strong>Smoking during pregnancy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>99.5</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Pregnancy acceptance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>82.6</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>17.4</td>
</tr>
</tbody>
</table>
RESULTS

The results in my thesis are discussed in relation to my research questions in a systematic manner, meaning that I recapitulate the research question and then discuss the findings one by one.

**What is the validity and reliability of the Farsi version of the Social Support Questionnaire (Sarason et al., 1983)?**

The results from the first study show that the Farsi version of the Social Support Questionnaire has satisfactory psychometric properties in terms of internal consistency and construct validity supporting empirical evidence for its use in research and practice in Iranian culture. The internal consistency in terms of Cronbach’s Alpha for the SSQN scale was .95 and for the SSQS scale, was .96.

The KMO-test supported the suitability of the data set to be factor-analyzed (SSQN: KMO = .950; SSQS: KMO = .954). There was a highly significant correlation between SSQN and SSQS (R = .39; p < .001) of medium effect size. The more social network individuals reported, the more they were satisfied with the social support they experienced. Women showed a higher satisfaction with social support assessed by means of the SSQS compared to men (z = -3.68; p < .001), whereas there was no gender difference in the number of reported supporting persons (z = -.14; p = .889). In an ANOVA, there was a significant main effect for educational level (F (5/263) = 2.25; p = .050; η² = .041; power = .726) with individuals with a bachelor’s degree reporting more supporting persons than subjects with primary or cyclic education (post-hoc test: p = .035). Furthermore, there was a significant main effect for gender relating to the satisfaction with social support (F (1/263) = 13.19; p < .001; η² = .048; power = .951) of medium effect size, whereas there was no significant main effect for the level of education (F (5/263) = .54; p = .748; η² = .010; power = .981).

However, there were no significant main effects for gender (F (1/265) = .12; p = .728; η² < .001; power = .064) or marital status (F (3/265) = 1.58; p = .194; η² = .018; power = .451) relating to the number of reported supporting individuals.

A significant main effect for gender (F (1/265) = 16.36; p < .001; η² = .058; power = .981) of medium effect size occurred with females reporting significantly higher satisfaction than males (t= 3.97; p < .001); but no significant main effect of marital status (F (3/265) = 1.37; p = .252; η² = .015; power = .363) relating to satisfaction with their perceived social support.
Neither the number of reported supporting persons ($R = .003; p = .958$) nor the satisfaction with social support ($R = -.005; p = .938$) was significantly associated with the age of the subjects.

*How high is the prevalence of domestic violence in pregnant women in Tehran?*

The results from study II show that the self-reported prevalence of any domestic violence (verbal, physical, or sexual) against pregnant women in Tehran was 28.2%.

Verbal abuse was reported from 26.0% of the investigated mothers, 4.8% reported physical abuse, and 5.5% reported sexual abuse during pregnancy, whereas 71.8% indicated no abuse at all and 1.3% reported all three types of abuse.

*Is there an impact of domestic violence on self-esteem and social support among pregnant women?*

The results from study II show that mothers experiencing verbal or sexual DV reported lower self-esteem than those who did not have such an experience. In addition, the abuse-index significantly negatively correlated with self-esteem and with satisfaction with SS, but not with the number of available supportive individuals, indicating a decreasing self-esteem with an increasing level of DV.

The occurrence of physical abuse was not related to self-esteem, availability of socially supportive individuals, or to satisfaction with SS. When verbal violence was reported, satisfaction with SS was lower and self-esteem was lower by trend. Both satisfaction with SS and self-esteem were lower when any type of violence occurred compared to the scores for women experiencing no domestic violence.

*What is the moderating impact of social support on the relationship between socio-demographic variables and self-esteem in pregnant women who have been exposed to domestic violence?*

It is not the number of available supportive people that act as a substantial buffer between DV and self-esteem, but the perceived quality and satisfaction with one’s social support.

The abuse-index was significantly negatively associated with satisfaction with SS and with self-esteem. However, when controlling the relationship to self-esteem for satisfaction with SS and number of available supportive persons, the score was reduced, indicating the role of SS as a buffer between the mothers’ experience of abuse during pregnancy and their
self-esteem. This assumed buffering effect of SS is additionally indicated by a substantial reduction of the correlation between self-esteem and duration of marriage, number of previous pregnancies, and weight gain during pregnancy when controlling these associations for the SSQ scores, even though the correlation coefficients did not reach a level of meaningful statistical significance.

Which way of coping do young pregnant women employ in stressful situations, and what are the relationships between life stressors and their ways of coping?

The results from study III show that a ‘sudden, unexpected death of a close person’ was most often reported, whereas ‘sexual assault’ was reported less often. The events ‘life-threatening illness or injury’, ‘sudden, unexpected death of someone close’, and ‘divorce’ were rated the highest stressful impact, whereas ‘exposure to toxic substance’ and ‘sexual assault’ were rated of lowest stressful impact.

The more the mothers were stressed because of life events, the more they used ‘positive reappraisal’ as a way of coping. The more stress the mothers perceived, the less often they used ‘escape avoidance’ as a way of coping. When the mothers perceived high stress due to a ‘divorce’, they less often used ‘confrontive coping’. When the mothers perceived more stress, they were more satisfied with social support. Generally, self-esteem did not show a substantial correlation with perceived stress in this study, except with ‘combat or exposure to a war-zone’ and ‘being held in captivity’. Those with more perceived stress had poorer general mental health.

The more often young mothers reported that they used ‘positive reappraisal’ as a way of coping, the more stressful they rated the impact of a ‘divorce’, a ‘life-threatening illness or injury’, a ‘sudden, unexpected death of a close person’, or the experience of a ‘natural disaster’, whereas the experience of ‘combat or exposure to a war zone’ was significantly negatively associated with ‘confrontive coping’, ‘planful problem-solving’, ‘seeking social support’, ‘escape avoidance’, and ‘self-control’. The higher the stressful impact of the experience of a ‘fire or explosion’ or ‘physical assault’ was, the less often the subjects used ‘escape avoidance’ and ‘distancing’ as a way of coping, whereas the stressful impact of a ‘divorce’ was negatively associated with ‘confrontive coping’.

The more the mothers were, on average, perceived as supportive, the more often they applied ‘planful problem-solving’, ‘seeking social support’, ‘escape avoidance’, ‘distancing’, and ‘self-control’ as ways of coping; whereas satisfaction with social support was positively correlated with all coping factors except for ‘escape avoidance’ and ‘positive reappraisal’.
The higher the self-esteem of these young mothers, the less often they used ‘escape avoidance’ and ‘confrontive coping’.

*What are the relationships between socio-demographic variables, domestic violence, coping, social support, and general mental health of young women living in Tehran during pregnancy and infants’ birth weight?*

The results from study IV show that there was no statistically significant association between birth weight and the mother’s level of education. The weight before the pregnancy, the number of prenatal care visits, the history of a LBW child, and the increase in weight during pregnancy were significantly associated with birth weight. Women who reported physical abuse during pregnancy delivered babies of lower birth weight. The more the women were satisfied with social support, the higher was the birth weight of their infant. The more use of positive reappraisal as way of coping, the higher was the birth weight of their baby. There was no statistically significant relationship between general mental health (GHQ total score) and birth weight in this sample.

Verbal abuse was reported with the highest frequency by 26% of mothers, but there wasn’t a statistically significant association between verbal abuse and infants’ birth weight. When mothers reported that they were physically abused during pregnancy, the birth weight of their child was significantly lower than of those whose mothers did not report such experiences.

In a hierarchical multiple regression with birth weight as dependent variable, the variation in gestational age, mother’s weight before pregnancy, mother’s increase in weight during pregnancy, the mother’s satisfaction with experienced social support combined with the ways of coping (‘planful problem-solving’, ‘positive reappraisal’, and ‘seeking social support’) explained about 23% of the variance of birth weight of the baby with each variable set significantly contributing to this amount.
DISCUSSION

Psychosocial factors in pregnancy have become major concerns for those who work in medical settings and come in contact with pregnant women. Increasing attention to the complexity of the period of pregnancy shows the importance of this issue. Most of the research originates from developed countries, whereas such research is scarce in Iranian society. The overall aim of this thesis is to explore the relationships between socio-demographic variables, domestic violence, coping, social support, self-esteem, and the general mental health of young women during pregnancy, living in Tehran, and infants’ birth weight.

In the first study, I wanted to investigate the psychometric properties of the Social Support Questionnaire developed by Sarason et al. (1983) in order to test whether the instrument can meaningfully be applied to Iranian women in my investigation.

In the other studies that are combined with this thesis, I investigated the prevalence of domestic violence during pregnancy, the ways that pregnant women use to cope with their life events, and I explored the relationships between socio-demographic variables, domestic violence, coping, social support, self-esteem, and the general mental health of young mothers living in Tehran during pregnancy and their infants’ birth weight.

The participants of this research were young mothers of low socio-economic status. The most important findings are as follows, and I will thus mainly focus these in my discussion:

- The self-reported prevalence of any DV (verbal, physical, or sexual) against pregnant women in Tehran was 28.2%.
- The abuse-index was significantly negatively associated with satisfaction with social support and with self-esteem.
- Women who reported physical abuse during pregnancy had infants of lower birth weight.
- The more the women were satisfied with social support, the higher was the birth weight of their infants.
- The more the mothers were stressed because of life events, the more often they used ‘positive reappraisal’ as a way of coping, and the less often they used ‘escape avoidance’.
- The higher their self-esteem was, the less often they used ‘escape avoidance’ and ‘confrontive coping’.
- The more often the mothers used ‘positive reappraisal’ as a way of coping, the higher was the birth weight of their baby.
- Socio-demographic factors such as the mother’s weight before pregnancy, the number of prenatal care visits, the mothers’ history of a LBW child, and the increase of weight during pregnancy were significantly associated with their infants’ birth weight.
- We could not find a significant relationship between the general mental health of the young mothers and their infants’ birth weight in our sample.

**Domestic violence and health outcome**

The self-reported prevalence of any DV (verbal, physical, or sexual) in the pregnant women in Tehran was 28.2%. This is a similar level compared to many investigations in developing and developed countries (Irion, Boulvain, Straccia, & Bonnet, 2000; WHO, 2005). DV is generally still a taboo subject that constitutes a family’s secret in Iranian society. Many Iranian women who are victims of DV, especially those of low socio-economic status, prefer not to ask for support or help from society or jurisdiction because they fear for their own safety and future. Religious beliefs and patriarchal societal norms and values still play a significant role in Iranian women’s understanding of their own position in the family and society. Women who experience DV may refuse to complain about it or leave the marriage because of shame, economic problems, fear of being rejected by their family, or fear of losing their children. A lack of knowledge about women’s legal rights and their shame in reporting the abuses are some of the most important hindrances. In this study, higher education of the mother and husband, and women’s employment were protective conditions against the occurrence of DV. Those women, who worked had significantly higher education than those who did not work. Women with higher education have the opportunity to learn more about their rights and their position in society and the family. In traditional Iranian families, the husbands’ income usually is the only one. Furthermore, if a woman does work, she has the legal right to not spend her income on the family, and the husband does not have the legal right to ask his wife for money because the law declares it the husband’s duty to earn and provide money for his wife and child/children. Women’s work may give the impression to their husbands that their wives are economical independent; consequently, if they do something wrong to their wives such as DV, it would be easier for the woman to leave the stressful situation compared to those women who may encounter economic difficulties after separation.
One of the important consequences of being abused often is a low and insufficient level of social support (Mitchell & Hodson, 1983). The present study found similar results as satisfaction with SS was lower when any type of violence occurred compared to women without such an experience of violence. Women experiencing DV may stigmatize themselves and consequently often might not ask for support when they are in need because they are afraid of additional violence by their husbands. One function of SS is to enable a positive adjustment despite adversities, and it also has been shown to be a potential buffer against the negative consequences of stress (Sarason et al., 1983). However, due to societal attitudes and values combined with their own shame those women, who experience DV, do not benefit much from the stress buffering impact of social support, and the lack of social support and the lack of social satisfaction might make them even more vulnerable for the negative consequences of DV on health.

The abused women in this study also reported lower self-esteem, which is consistent with what Campbell and Lewandowski (1997) demonstrated. This could be due to the fact that the experience of DV may lead to insufficient social support and simultaneously to low self-esteem. Pearlin, Lieberman, Menaghan, and Mullan (1981) proposed that social support strengthens self-esteem and a sense of environmental mastery. So this lack of social support among abused women could be a reason for low self-esteem. Furthermore, stress caused by the abuse can lower self-esteem (Lazarus & Folkman, 1984). Self-esteem is linked with adaptive personality functioning (Neiss, Sedikides, & Stevenson, 2002). The abused women, who have low self-esteem, may not be able to employ effective coping behaviours in stressful situations compared to those with high self-esteem.

Women who reported physical abuse during pregnancy delivered babies of low birth weight, which is in line with findings from other studies (Coker, Sanderson, & Dong, 2004; Faramarzi, Esmaelzadeh, & Mosavi, 2005; Kaye, Mirembe, Bantebya, Johansson, & Ekstrom, 2006; Lipsky, Holt, Easterling, & Critchlow, 2003; Valladares, Ellsberg, Peña, Högberg, & Persson, 2002).

Complications during pregnancy caused by domestic violence may occur directly or indirectly. Directly, they can result in abdominal trauma (Pearlman, Tintinalli, Lovewa, & Lung, 1990). Indirectly, adverse outcomes may arise from stress as a consequence of victimization and isolation (Austin & Leader, 2000). Battery may increase a pregnant woman’s experience of stress, decreasing her personal and social resources for effectively dealing with stress. As mentioned earlier, abused women were less satisfied with their social support compared to non-abused women. Non-abused women who were more satisfied with
their social support had infants of higher birth weight compare to those who were the victims of DV. This confirms findings from another study (Da Costa, Dritsa, Larouche, & Brender, 2000).

**Coping and social support**

Social support plays an important role in the psychological well-being of pregnant women (Gurung, Dunkel-Schetter, Collins, Rini, & Hobel, 2005). The most powerful theoretical perspective on social support is that social support decreases the effects of stress on health (acts as a stress buffer). This can be explained by the encouragement of feelings of belonging, safety, and security by the perception of individuals that they trust and that they can count on, or by the perception that support is available when needed. Support has been shown to improve the effectiveness of coping strategies, while the belief that support is available decreases the perception of the event as stressful (Lakey & Cohen, 2000). This view is related to research and theory on stress and coping by Lazarus and Folkman (1984).

Social support is presumed to be an important resource for reducing the negative effects of stress, one of the major psychosocial factors causing low birth weight (Cohen, 2004). Another possible reason for women with satisfying social support giving birth to infants with higher birth weight might be that these pregnant women benefit from the direct effect of social support. The direct effect of social support is beneficial irrespective of whether one is under stress or not. Having contact with others helps individuals regulate their emotions and decreases the intensity of negative emotions. It also provides them with different types of support such as emotional, informational and tangible support, which, in turn, influences health behaviours and might lead to an effective use of available health services, such as attending regular visits at primary health care centres for prenatal care, which, in turn, might help the women avoiding stressful situations (Cohen, 2004). Receiving aid in terms of social support will improve one’s coping skills and ideas about how to deal with life stressors such as domestic violence. When social support continuously is available, this may decrease the degree of stress caused by life events, or it may improve the ability to control the various life stressors and, as a result, improve the psychological well-being. Thus, associations of social support and psychological well-being may be mediated by experiencing fewer life stresses. Perceived availability of social support lets the individual successfully assemble coping resources. Social support may decrease the negative impact or number of life events or help the individuals gain skills which are needed to reduce the effects of the stress.
According to Lazarus and Folkman’s theory of stress and coping, the appraisal of a situation affects the perception of an event as stressful. Negative appraisals can lead to more emotional distress (Lazarus & Folkman, 1984). Stressful events shape people’s cognitive appraisals and coping responses. Both situational and personal factors such as feelings of having control of a situation and the amount of available resources have an effect on an individual’s ability to cope with stressful situations (Hamilton & Lobel, 2008). The best coping strategies are those that change the person-environment relationship for the better (Lazarus & Folkman, 1984). Seeking social support as a possible way of coping with stressful life events can lead to overall well-being because it provides individuals with positive resources, a sense of mastery and feelings of self-worth, and self-esteem (Cohen & Wills, 1985; Rodin & Salovey, 1989).

The more the mothers were stressed by life events, the more they used ‘positive reappraisal’ as a way of coping. Similar findings were reported from other studies (Yali & Lobel, 1999; Giurgescu, Penckofer, Maurer, & Bryant, 2006). Positive reappraisal consists of strategies for transforming a negative event into a positive experience. How somebody copes with a stressful situation depends on whether or not the person feels that the stressful event is significant for him or her (Lazarus, 1991). Positive reappraisal as an emotion-focused form of coping has effect on health-related outcomes and can buffer the impact of stress. It also has a direct effect on well-being (Lazarus & Folkman, 1984). The more often ‘positive reappraisal’ was used as a way of coping by young mothers; the higher was the birth weight of their babies. ‘Positive reappraisal’ relates to ‘cognitive’ strategies. Cognitive coping strategies help the individual to be able to appraise a stressful situation more positively (Aldwin, 1994). As a result, pregnant women who apply positive reappraisal more often as a way of coping perceive less stress compared to others. One explanation why women used more positive reappraisal could be that, although they have encountered stress, they reappraised it positively as being pregnant and becoming a mother. The participants were religiously oriented and, in this culture, prayer, which is one type of positive reappraisal, is used in difficult and stressful circumstances.

These women also used ‘escape avoidance’ rarely as a way of coping when faced with stressful situations, a result similar to other findings (Hamilton & Lobel, 2008; Giurgescu et al., 2006; Yali & Lobel, 1999; Yali & Lobel, 2002). This may be due to the fact that, despite being stressed, they were also realistic about the situation instead of waiting for a miracle happen to them to change the stressful situation for the better. Women who had higher self-esteem used ‘escape avoidance’ and ‘confrontive coping’, less often. Individuals with high
self-esteem usually are engaged in healthy behaviours and can better cope with stressful life events, usually receive more social support (partially because they actively search for it), and are more satisfied with their social support. This is supported by our findings since the women in our study, on average, had large social networks, did not avoid being with people, and engaged in healthy behaviours, which are all negatively associated with unfavourable behavioural attempts to escape or avoid, and neither did they express their anger to the person(s) who caused the problem.

**Socio-demographic variables and health outcome**

Similarly, socio-demographic factors are also important and should always be considered. The risk factors contributing to LBW can be divided into socio-demographic risk factors, medical risks factors before pregnancy, risks factors during pregnancy, lack of health care, environmental risks, and behavioural risks. In this investigation, pregnant women with medical risk factors before and during their pregnancy, which could have effects on their infants’ birth weight, were excluded. The weight before the pregnancy, the number of prenatal care visits, and the increase in weight during pregnancy were significantly positively associated with infants’ birth weight, and a mother’s history of delivering a LBW child was significantly negatively associated with infants’ birth weight. Prenatal care is an important factor that enables midwives and health care professionals to screen for possible risk factors and to provide help or assistance to reduce their negative consequences on the pregnant woman and her foetus. Prenatal visits provide the opportunity to assess risk factors associated with pregnancy; provide counselling, and further management. Prenatal care programs in Iran provide nutritional counselling, careful monitoring of maternal weight gain, screening for behavioural and medical risk factors, blood and urine tests, and emotional support for pregnant women in at least six sessions, which are all connected to birth weight of the infants. Another important health issue related to infant birth weight is maternal mental health. However, we could not find a significant relationship between mothers’ general mental health and their infants’ birth weight, which confirms the findings of Suri et al. (2007) in the USA and Berle et al. (2005) in Norway. There are possibly other confounding variables that contribute to the association between psychological disorders and birth weight.

Relationships between psychosocial factors and infants’ birth weight could be identified as relationships with social support and coping that play an important role in adjustment to stress caused by life events.
Methodological considerations

Methodological considerations are important to evaluate the quality of research. In the following paragraph, I try to make some critical reflections on this study.

Sample

The recruitment of respondents always represents a challenging issue for a researcher. In my investigation, respondents were recruited from the University Hospital where my study was carried out. Two midwives were trained in data collection. Reporting sensitive data, such as domestic violence to a research assistant (midwives) could have had an effect on the reported information in this study.

One other issue about the sample is the differences between the respondents in study one and those in other three investigations. However the data of the psychometric properties investigation of the SSQ in the first study were applied as a general population sample with the main aim to test the factor structure and reliability of the measurement in an Iranian context. Since we did not derived norms from this study and just used the factor scores for comparisons between subgroups or for analysing associations with other target variables, the differences between the two samples related to gender, age, marital status, or education did not impact the findings based on the data collected from the young mothers in studies II-IV.

Concerns of causality and generalization

In this thesis, all the studies were cross-sectional. A cross-sectional study is a type of non-experimental, descriptive study (prevalence study) that is done at a particular time and does not allow causal interpretations. In order to statistically prove causal relationships, longitudinal studies are needed with repeated assessments (Bruce, Pope, & Stanistreet, 2008). The reasons for the decision for a cross-sectional design were the availability of the respondents, the context, the nature of my investigations as a PhD project, and economic limits. In a large city like Tehran, performing a longitudinal study is demanding and time consuming. For example, we do not have any data from lifetime prevalence of DV during the respondents’ marriage time. Even though this kind of study does not allow causal interpretations, causal statements still can be captured based on a theoretical view. For instance, there is a possibility to discuss the causal relationships when findings are consistent with other longitudinal researches’ results.

The study sample is not representative of pregnant women in Iran. The findings of our studies are limited by the sample consisting mainly of women from an urban area, so my concern is that I cannot generalize my findings to all Iranian pregnant women. To be able to
answer this question, I should be able to compare women based on different indicators, for example such as culture and ethnicity from different geographical areas.

According to The World FactBook (2012), Iran’s ethnic groups consist of Persians (61%), Azeris (16%), Kurds (10%), Lurs (6%), Arabs (2%), Baloch (2%), Turkmen and Turkic tribes (2%), and others (1%). Women from various ethnicities are different according to personal characteristics, social norms, and also are culturally different.

Validity

It is important to take into account validity and reliability when assessing the quality of research. The two concepts are interrelated. In order to get high validity, high reliability is also needed in research, but high reliability does not presume high validity (Robson, 2002). Validity is defined as the degree to which a question really measures what it should measure (Litwin, 1995; Robson, 2002). There are different kinds of validity: construct validity, content validity, and criterion validity. Construct validity can be defined as the “theoretical measure of how meaningful a survey instrument is” (Litwin, 1995, p. 45). In this study, the validity of the Social Support Questionnaire was assessed by construct validity. Content validity measures the appropriateness of each item in a questionnaire in relation to what it intends to measure (Bruce et al., 2008). Finally, criterion validity is defined as how well the measurement agrees with other measurements, which are supposed to measure the same or a similar construct (Bruce et al., 2008). Another factor which may influence the validity of the results is non-response rate (de Winter et al., 2005). Non-respondents may answer the items differently in the questionnaires, so if the rate of non-response is high, this can negatively affect the validity of the study. In this study, the response rate was 100%, which in turn increased the validity of the study. This high response rate was because the midwives kept track of the women who were agreeing to participate in the research study.

This thesis is based on self-report questionnaires. Self-report health questionnaires are helpful instruments to screen health conditions of the respondents, but they are subject to reflect one’s general perception of health, which might affect the validity of the study. In sum, the high response rate combined with the big sample size strengthens the validity of the results.

Reliability

Reliability refers to the consistency of a measure. A test is reliable if we get the same result when we do the test repeatedly (Robson, 2002). Techniques that can be used to
determine the reliability of a measurement are test-retest, analysis of the internal consistency (Cronbach’s alpha), parallel-forms of the measurement, and the use of different rates.

Many participants were of low educational level. As a result, the midwives had to explain the questionnaires in detail, and with these explanations the midwives might have imposed their view onto the participants. The environment where the participants complete the questionnaires and their emotional state at the time of data collection all affects the recall and evaluation of events. Data were retrospectively collected. Adverse birth outcomes may cause increased reporting of life events. However, the frequency of negative birth outcomes was low in our study.

The findings in our studies are limited by the exclusive use of questionnaire data. The necessity of conducting a qualitative research on pregnant women’s views and reflections about their pregnancy and their social, economic, and physical conditions are acknowledged in this thesis.
Ethical considerations

The investigation was approved by the Ethics Committee of the Medical School of Tehran University of Medical Sciences. Due to the respondents’ situations, several ethical aspects were under consideration. The respondents were six hundred mothers aged between 15 and 29 years. They were recruited from Akbarabadi Hospital, which belongs to the Medical School of Tehran University of Medical Sciences. Despite receiving ethical permission to conduct the study, some other ethical issues were also considered.

Domestic violence was one topic of my investigation. The topic is sensitive, and I assume that DV was underreported. Another ethical issue is related to unpleasant feelings that might have been caused by the completion of the questionnaires. Remaining sensitive to the respondent’s reactions, two midwives were trained to collect data. The attempt to create a respectful climate during data collection was very important. Availability of aid was one of the ethical recommendations which we thought might help the young mothers if any unpleasant responses came up. All the material from respondents was guaranteed to be handled safe and confidentiality was assured.

Finally, one major ethical issue in research is always represented in reflection on research questions, methodology, and reports of findings (Gustafsson, Herméren, & Pettersson, 2011).

My research questions were somewhat sensitive since they partly referred to domestic violence. But this topic must be investigated to enable health professionals to provide meaningful support to affected women and to promote women’s health in Iranian society. Regarding the methodology, one issue is about the number of used questionnaires. Several questionnaires were used. Taking into consideration the young mothers’ situation after delivery raises the question of whether or not the number of questionnaires could have been reduced whilst maintaining a good quality in research questions, possibilities of data analysis, and interpretation. Answers to these questions are not easy. Ultimately, I believe that the questionnaires gave the respondents the opportunity to reflect on topics that they may not have reflected on before.

This investigation, as far as I know, did not harm any of the young mothers, and the data has been reported based on high-quality methodological analysis.
CONCLUSIONS AND IMPLICATIONS

In this thesis, I tried to explore some issues concerning psychosocial factors in young Iranian mothers who live in Tehran, Iran. Providing knowledge about this issue can facilitate the development of interventions to improve the social conditions and the behaviour of pregnant women to cope effectively with life crises and to reduce or even prevent adverse outcomes that may be caused by negative life circumstances. Effective interventions can be achieved only if the intervention is adapted to the specific needs of pregnant women considering cultural specificities. Pregnant women can benefit from a deep and comprehensive understanding of their psychosocial situation during pregnancy and its link with the infants’ health outcomes, such as birth weight.

In summary, social support during pregnancy reduces stress that is caused by life events or by the pregnancy itself. Furthermore, social support has effects on pregnant women in their choice of particular coping styles in stressful situations, which can reduce stress. Both coping and social supports modify the traumatic events, and buffer the effects of stress caused by such events on mental health. Since domestic violence during pregnancy can lead to harm for both mother and the foetus, social support can reduce the impact of stress caused by the violence and can even directly reduce the incidence of domestic violence. Social support is also associated with self-esteem, and high self-esteem, in turn, has an effect on the perception of social support which again can foster positive effects and thus reduce the disturbing psychological impacts of stress. All in all, these studies demonstrate that providing pregnant women with social support, not only through network size, but also through high-quality support, can reduce the adverse birth outcomes resulting from stress.

Considering the findings of this research, I note some recommendations:

- In order to reveal the societal importance of DV and its psychological and health related consequences, there is a need for longitudinal investigations on random samples including women from rural areas, where the occurrence of DV is presumably even higher than in our sample. Based on the assumption that DV in such a population would happen more often, such investigations must be carried out very carefully based on open and trustful relations, and support for affected women has to be guaranteed.
- Economic, law enforcement, and legislative measures concerning women who have been exposed to DV should be seriously implemented with support from governmental rules and policies.
• More governmental social services are needed to support women or young mothers who have been victim of DV by creating or building residential homes even if the women’s identity has to be handled confidentiality.

• Provide pregnant women in general with an improved social network, for example by specially founded self-help groups and by a better quality of support from those who are the most important part of their social network, to be able to cope more effectively with stress.

I hope this investigation provides evidence for the authorities in the Ministry of Health and Medical Education to take actions in favour of pregnant women to supply them with safe conditions and to improve their health, which has a direct effect on their infants’ health.
ACKNOWLEDGMENTS

First of all I would like to thank the Department of Social Work, Umeå University, for giving me the opportunity to finalize my doctoral thesis. Along the way of my research, many people have contributed in many ways to this thesis, and I would like to thank and acknowledge them here.

In particular, I would like to thank my principle supervisor, Dr. Mehdi Ghazinour, Associated Professor at Umeå University, Department of Social Work, Sweden, for skilfully and respectfully guiding me through the crucial time of my doctoral process all the way up to the end. His pragmatism is greatly appreciated. I sincerely appreciate his supervision and constructive advice throughout the project.

Gratitude and thanks also to my co-supervisor, Prof. Lennart Nygren from the Department of Social Work at Umeå University, Sweden, for his insight and enthusiasm related to my work.

Many thanks go to my co-supervisor, Prof. Jörg Richter from the Centre of Child and Adolescent Mental Health in Oslo, Norway, who has commented on my work and helped me with one of the important parts—methods—and who responded to my questions very quickly whenever I asked.

In particular, I would like to thank Prof. Mohhamad Taghie Joghataie from the Department of Anatomy at Tehran University of Medical Sciences, Iran, for establishing collaborative research between Iran and Sweden and for encouragement, guidance, and administrative support provided during the study period and convincing the University to fund the study.

I appreciate Prof. Marzieh Nojomi, Department of Community Medicine at Tehran University of Medical Sciences, Iran, for local supervision and constructive advice on the project.

I also want to thank the two midwives at Akbarabadi Hospital in the postnatal wards, Ms. Ashkiyan and Ms. Fallah, for helping me with the data collection.

I am also grateful to all the women who agreed to participate in this study. Their generosity is greatly appreciated.
Especial thanks to my husband Pourya. I would never have been able to complete this thesis without his encouragement and patience during the last two years. Pourya has always been available for me. Whenever I felt I cannot do it, he maintained confidence in my ability.

I would also like to thank my sister Mamak for her companionship along the way.

Finally, I would especially like to thank my mother Maryam, she has not only been my mother but has also replaced my father during my entire life; she has given me all the opportunities to continue my education. She dedicated her life and her youth to me. I appreciate her confidence in my ability to complete this thesis. This thesis is a result of her efforts and love.
REFERENCES


