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ORIGINAL ARTICLE

Social support in depression: structural and functional factors, perceived control and help-seeking

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Aims. This study examined the associations of social support, loneliness and locus of control with depression and help-seeking in persons with major depression.

Methods. Twelve-month help-seeking for emotional problems was assessed in a cross-sectional 2006 Estonian Health Survey. Non-institutionalized individuals aged 18–84 years ($n = 6105$) were interviewed. A major depressive episode was assessed using the Mini-International Neuropsychiatric Interview. Factors describing social support, social and emotional loneliness and locus of control were assessed, and their associations with depression were analysed. The associations with reported help-seeking behaviour among people identified as having a major depressive episode ($n = 343$) were explored.

Results. Low frequency of contacts with one's friends and parents, emotional loneliness, external locus of control and emotional dissatisfaction with couple relations were significant factors predicting depression in the multivariate model. External locus of control was associated with help-seeking in the depressed sample. Interactions of emotional loneliness, locus of control and frequency of contacts with parents significantly predicted help-seeking in the depressed sample.

Conclusions. Depression is associated with structural and functional factors of social support and locus of control. Help-seeking of depressed persons depends on locus of control, interactions of emotional loneliness, locus of control and contacts with the parental family.

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Key words: Emotional loneliness, help-seeking, major depression, social support.

Introduction

Sociocultural factors have an important influence on shaping help-seeking behaviour in people who suffer from mental disorders (Angermeyer *et al.* 2001). Previous studies have indicated that the context of social relations is essential for understanding help-seeking processes (Carpentier & White, 2002). Social context, particularly the influence of social support has been shown to be an important factor in predicting utilization of health services (Albert *et al.* 1998; Kang *et al.* 2007; Amaddeo & Tansella, 2011; Maulik *et al.* 2011).

Social support has been defined as 'information leading the subject to believe that he or she is loved, esteemed, and belongs to a network of mutual obligations' (Cobb, 1976). The functional aspect of social support emphasizes the qualitative nature or type of relationship and perceptions of supportiveness (Kang *et al.* 2007; Maulik *et al.* 2011). Structural indicators of social support include the number of social ties, frequency of contacts with members of the supportive network, participation in social activities and organizations, as well as living arrangements and cohabitation status (Olstad *et al.* 2001; Kang *et al.* 2007).

Whether having a larger network and a higher level of functional social support increase the use of medical services, is still a controversial issue. A meta-analysis by Albert *et al.* (1998) shows contradictory findings. Some studies have reported a positive relationship between social support and mental health service utilization (Carpentier & White, 2002; Maulik *et al.* 2011) while others have reported no association (Ng *et al.* 2008) or even a reverse association between social support and psychiatric service use (Maulik *et al.* 2009). It seems that the functional factors which describe the emotional quality of relations (Albert *et al.* 1998) and attitudes contributing to help-seeking (Schomerus *et al.* 2009) could have a stronger association with help-seeking than structural aspects of the social support.

A further question is how help-seeking behaviours vary between mental disorders. It has been concluded that the effect of social support on service use is independent of type of psychopathology (Albert *et al.* 1998). However, in the case of psychotic disorders

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significant others in the social network exert considerable influence on how, when and what type of help is sought (Morgan *et al.* 2005). Major depression is one of the most disabling mental disorders, the treatment of which requires extensive resources (Kessler *et al.* 2001), which could be reduced by paying attention to social factors. Low social support is a factor that has been found to be associated with depression (Wade & Kendler, 2000; Patten *et al.* 2010), mostly in studies of depression in the elderly (Prince *et al.* 1997; Heikkinen & Kauppinen, 2004; Golden *et al.* 2009) and less so in population studies. One complex phenomenon which describes perceived quality of social support and is associated with impaired health and health-related behaviour is loneliness (Hawkley *et al.* 2008). Loneliness 'concerns the subjective evaluation of the situation individuals are involved in, characterized either by a number of relationships with friends and colleagues which is smaller than is considered desirable (social loneliness), as well as situations where the intimacy in confidant relationships one wishes for has not been realized (emotional loneliness)' (De Jong Gierveld & Van Tilburg, 2010). It has been found that loneliness is a strong longitudinal predictor of changes in depressive symptomatology (Cacioppo *et al.* 2010).

Previous findings indicate that functional characteristics of social support account for more variance in depressive symptomatology than structural measures. (Antonucci *et al.* 1997; Albert *et al.* 1998). Whether functional characteristics of social support are similarly associated with help-seeking among depressed persons remains an unanswered question. Earlier studies of the role of help-seeking in the case of depression were carried out in selected populations, with conflicting results (Olstad *et al.* 2001; Kang *et al.* 2007) and with the need to replicate the findings (McCracken *et al.* 2006). There is a strong association between depression and perceived social isolation (Hawthorne, 2008) and there is a reciprocal influence between loneliness and depressive symptomatology (Cacioppo *et al.* 2006). It leads to the question whether loneliness could be an important factor associated with help-seeking of depressed persons. Most depressed patients receive some support from their family members, friends and co-workers (Cooper-Patrick *et al.* 1997), whose concern has been found to predict help-seeking for depression (Fröjd *et al.* 2007). At the same time there are many patients for whom social support remains insufficient (Cooper-Patrick *et al.* 1997), and depending on the underlying factors this could either increase or decrease help-seeking from professionals. The wish to cope by oneself and preference to manage the problem themselves has been found to be the most common reason for depressed persons to avoid seeking treatment (Kessler *et al.* 2001; Lawrence *et al.* 2006; van Beljouw *et al.* 2010). At the same time treatment-seeking has been found to be associated primarily with the perceived failure of coping strategies (Cornford *et al.* 2007; Khan *et al.* 2007) and with attitudes and beliefs about control. Seeking help can be regarded as losing control, and whether this feeling leads to real help-seeking depends on personal beliefs about that particular behaviour (Schomerus *et al.* 2009). This leads to an important dimension of personality called locus of control (LOC) and its possible association with help-seeking among depressed persons. This construct, generated through Rotter's social learning theory (Rotter, 1966), refers to the extent to which an individual perceives events in his or her life as being a consequence of his or her actions, and thus under his or her perceived control. It is assessed in terms of whether one believes that events in peoples' lives result from their own efforts, skills and internal dispositions (internal control) or stem from external forces, such as luck, chance, fate or powerful others (external control). The research on locus of control and depression has generally indicated that externality is linked to depression (Daniels & Guppy, 1997; Spijker *et al.* 2001; Harrow *et al.* 2009). It is worth examining whether the belief that one is unable to influence one's own outcomes increases or decreases probability in depressed persons to seek treatment and how this is associated with the low social support. Previous studies (Albert *et al.* 1998; Carpentier & White, 2002) have indicated the need to study reciprocal functioning of the different parts of social support describing more clearly how they interact with each other. A combination of LOC, loneliness and some structural factors of social support could yield additional information about help-seeking of depressed persons.

The aims of our study were to investigate how different factors relating to social support and locus of control are associated with depression and help-seeking in depressed persons.

We hypothesised that: (a) functional factors of social support have stronger associations with depression than structural factors; (b) persons with higher loneliness, dysfunctional relationships and external LOC have a higher rate of depression; (c) persons with higher loneliness, dysfunctional relationships and external LOC are more likely to engage in help-seeking behaviours for depression.

Methods

Setting and study design

The study was part of the Estonian Health Interview Survey (EHIS, 2006), a population-based survey of health

and health-related behaviour, which is part of the European Health Survey System (Oja *et al.* 2008). The survey, which consisted of face-to-face structured interviews, was carried out between 2006 and 2008. Estonia is a Baltic state with a population of 1.3 million people.

The target population of EHIS 2006 was the permanent residents of Estonia, aged 15–84 on 1 January 2006. The Population Registry was used as the population frame. A stratified systematic sampling method was used to select the sample. The target population was divided into non-overlapping strata by place of residence, sex and, age. The design and the sampling procedure of the survey are described in greater detail elsewhere (Oja *et al.* 2008).

The survey was approved by the Tallinn Medical Research Ethics Committee (approval No 1089). Written informed consent was obtained from all participants.

Sampling and subjects

The initial sample size was 15 000 persons. Before the fieldwork began, 11 023 people were selected from the initial sample by simple random sampling. This group of individuals formed the final sample. To determine the sample size for each stratum, the size of the target population and the differences in the response probability by region and age group were taken into account. The total number of completed questionnaires was 6512, of which 6494 were eligible for data entry. After the data entry process there were 6434 recorded cases in the database. The corrected response rate of the survey was 60.2%. The response rate was lower in the younger age group, among men and in regions with larger cities.

The sample size of this study was 6105 persons (2928 men and 3177 women) aged 18–84 years. The subsample of current major depressive episode included 343 persons (118 men and 225 women) aged 18–84 years.

Measures

Socio-demographic and health-status measures, as well as data about depression were derived from the structured interviews of (EHIS2006). To measure the current (past two weeks) major depressive episode (MDE), the participants were interviewed by means of the depressive episode module of the Mini-International Neuropsychiatric Interview (MINI). MINI is a short structured diagnostic interview developed for DSM-IV and ICD-10 psychiatric disorders (Lecrubier *et al.* 1997).

Loneliness was measured with the De Jong Gierveld Short Scale for Emotional and Social Loneliness (De Jong Gierveld & Van Tilburg, 2010). The De Jong Gierveld 11-item loneliness scale has two sub-scales: emotional (six items) and social (five items) loneliness. In this scale, respondents are asked to choose between three possible answers to the 11 items: 'totally agree', 'more or less agree' or 'do not agree at all'.

Other indicators of structural and functional factors of social support are described in the Appendix.

Locus of control was measured by three items from the Rotter Internal-External Locus of Control Scale (I-E Scale). The items have a forced-choice response format where respondents are instructed to select one statement out of each pair. Higher scores indicate a greater degree of externality (Rotter, 1966).

Help-seeking for emotional problems and for other health issues was assessed with the following questions: a response *Have you sought help due to your emotional problems (depression, anxiety) during the previous 12 months?* of 'Yes' was considered as help-seeking.

Statistical analysis

Binary logistic regression analysis adjusted for age and gender was used to assess the associations of depression with social support factors. Model 1 was calculated by using each correlate at a time, adjusting the analyses only for gender and age. A multivariate logistic regression model (Model 2) adjusted for gender was constructed from the variables found significant in Model 1. Age was entered as a continuous variable into the multivariate model.

Binary logistic regression analysis adjusted for age and gender was used to assess the associations between help-seeking for emotional symptoms and household size, cohabitation, frequency of contacts with parents, children and friends, membership in an organization, emotional and social loneliness and emotional satisfaction with a couple relationship. Model 1 was calculated by using each correlate at a time, adjusting all the analyses only for gender and age. A multivariate hierarchical logistic regression model (Model 2) adjusted for age and gender was constructed from the variables found significant in Model 1.

Interactions of relationship indicators with other factors were tested by binary logistic regression analysis. Pairs of emotional loneliness and other social support factors were used as predictors in the first block of binary logistic regression. In the second block, the same pairs and the interaction between these variables were entered. Age was entered as a continuous variable. All models were adjusted for gender. The results were reported as odds ratios (OR) at 95% confidence intervals (CI). The level of statistical significance was set at $p < 0.05$.

Data analysis was carried out using the SPSS 17.0 for Windows (SPSS Inc., Chicago, IL, USA).

Results

Table 1 shows associations between social support factors and major depression. The odds of having depression were higher among non-cohabitants and those who did not belong to any organization. Depression was found to be significantly less frequent in people living in larger households and those who communicated more with their network members. All the functional measures of social support – social and emotional loneliness, as well as emotional satisfaction with a couple relationship – were significantly associated with depression. People who were not satisfied with their couple relationship had a higher frequency of depression. A more external locus of control was associated with higher odds of depression. In the multivariate model ($\chi^2(13) = 599.50$; $p < 0.001$; Nagelkerke $R^2 = 0.271$) – low frequency of contacts with friends and parents, emotional loneliness, external locus of control and emotional dissatisfaction with couple relationships remained significant factors for the prediction of depression.

Table 2 shows associations between social support factors and help-seeking behaviour in the depressed sample. A higher external locus of control was associated with an increase in the reporting of help seeking behaviour. The structural and functional factors of social support were not significant.

There were three significant interactions in the depressed group (Table 3). First, emotional loneliness was associated with higher rate of help-seeking in persons with more external locus of control but not in persons with more internal locus of control. Second, persons with high emotional loneliness reported more help-seeking behaviours if they had more frequent contacts with parents and siblings. Third, persons who were dissatisfied with their couple relationship were more likely to seek help if they had more frequent contacts with their parents and siblings.

Discussion

Both structural and functional factors of social support were associated with depression in our study. This supports the findings of previous studies, which have reported the importance of either both groups of factors (Antonucci *et al.* 1997) or emphasized the associations of perceived social support (Wade & Kendler, 2000) and loneliness (Heikkinen & Kauppinen, 2004; Heinrich & Gullone, 2006; Golden *et al.* 2009; Cacioppo *et al.* 2010) with depression.

Table 1. Social support factors and their association with depression: results of logistic regression

Factor	Sample size	% in sample	Model 1[a] OR (95% CI)	Model 2[b] OR (95% CI)
Total	6105			
Gender				
Male	2928	48.0		
Female	3177	52.0		
Household size			0.85 (0.76 to 0.94)**	
Cohabitation				
Yes	3759	61.6	1.00	
No	2346	38.4	1.65 (1.31 to 2.08)***	
Parents			0.89 (0.85 to 0.93)***	0.95 (0.90 to 1.00)*
Children			0.96 (0.94 to 0.99)**	
Friends			0.89 (0.86 to 0.91)***	0.94 (0.91 to 0.97)***
Organization				
Yes	1841	30.2	1.00	
No	4262	69.8	1.64 (1.25 to 2.15)***	
Emotional loneliness			1.71 (1.62 to 1.81)***	1.52 (1.42 to 1.62)***
Social loneliness			1.45 (1.35 to 1.56)***	
Locus of control			2.07 (1.85 to 2.33)***	1.50 (1.32 to 1.70)***
Satisfaction				
Satisfied	3820	62.6	1.00	1.00
Unsatisfied	343	5.6	4.62 (3.23 to 6.61)***	1.82 (1.21 to 2.72)**
Without a partner	1938	31.7	2.01 (1.55 to 2.59)***	0.88 (0.53 to 1.46)

[a]Adjusted for age and gender.
[b]Adjusted simultaneously for all factors.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

Table 2. *Social support factors and their association with help-seeking behaviour in the depressed sample (n = 343): results of logistic regression*

Factor	Model 1[a] OR (95% CI)
Household size	0.93 (0.75 to 1.15)
Cohabitation	
Yes	1.00
No	0.91 (0.57 to 1.44)
Parents	1.00 (0.91 to 1.10)
Children	1.02 (0.97 to 1.07)
Friends	1.0(0.95 to 1.06)
Organization	
Yes	1.00
No	1.37 (0.77 to 2.45)
Emotional loneliness	1.12 (0.99 to 1.26)
Social loneliness	1.02 (0.88 to 1.17)
Locus of control	1.36 (1.08 to 1.71)**
Satisfaction	
Satisfied	1.00
Unsatisfied	1.22 (0.60 to 2.47)
Without a partner	1.31 (0.78 to 2.19)

[a]Adjusted for age and gender.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

According to the present study, larger network size and more frequent contacts with children, parents, and especially friends could protect against depression. This accords with previous work (Chao, 2011; Benson, 2012) especially that of Fiori *et al.* (2006) which showed the particular importance of friends. It would appear that depression depends more on the absence of friends rather than the absence of family. Having friends and contacts outside the home probably implies a higher level of social integration, which could enable more social support. Our finding with regard to the inverse association between membership of an organization and depression probably reflects the same phenomenon. Because of the cross-sectional design of our study we can not infer any causal relationships and can only hypothesize about possible positive or dysfunctional nature of relations with one's friends or family.

Our result about the link between emotional loneliness and dissatisfaction with couple relations and depression indicates that low social support could be associated with depression. The subjective relationship factors could overlap. Poor marital quality, for example, has been found to increase the risk of loneliness (Hammen & Brennan, 2002), which, in turn, acts as a risk factor for depression. Because of the cross-sectional nature of the design, we cannot affirm the direction of the association between depression and dysfunctional close relationships. Low psychosocial functioning caused by mental disorder can also affect a person's experience of relationships. Depression has been found to have a detrimental influence on relationships (Hammen & Brennan, 2002), especially the long-term negative effect on close relationships (Patten *et al.* 2010; Kronmüller *et al.* 2011). In summary, the link between depression and relationships is probably a reciprocal loop.

On a more general level our results confirm that in the case of depression the functional factors of social support seem to be more important than structural factors (Antonucci *et al.* 1997). This idea is indirectly supported by our finding that social loneliness, which is more associated with the quantity of social relations, had a relatively non-significant association with depression compared to emotional loneliness. The limitation here is that we did not use support measures similar to those that have been used in previous studies (Wade & Kendler, 2000; Patten *et al.* 2010), thus making the results difficult to compare.

Despite the association with depression, none of the functional or structural factors of the social support were by itself associated with help-seeking of depressed subjects in our study. External LOC was the only individual factor which was associated with both depression and the ensuing help-seeking. It is known that perceived loss of control and external LOC are important correlates of depression (Cornford *et al.* 2007; Harrow *et al.* 2009). We can assume that when help is expected more from outside, as in the case of external LOC, acceptance of help can be easier. In the case of depressed persons with internal LOC, help-seeking could rather been felt as loss of control and was therefore avoided. The present study showed that the lack of social support described by emotional loneliness can increase help-seeking for depression among persons with external LOC. It has been found that loneliness is associated with perceived lack of control over outcomes (Heinrich & Gullone, 2006). Therefore, we can hypothesize that loneliness strengthens externality beliefs – people increasingly believe that efforts to change things will fail, and help can only come from outside. This could explain our finding that help-seeking in depression was associated with the interaction between LOC and loneliness.

One factor contributing to low social support can be dysfunctional close relationships, which are known as a reason for seeking help (Maulik *et al.* 2009). In our study the depressed people who were not satisfied with their couple relationship sought help more if they had more frequent contacts with their parental/sibling network. Higher frequency of contacts with one's parents was associated with help-seeking of depressed persons also in combination with emotional

Table 3. *Interactions between social support factors and their association with 12-month help-seeking in the depressed sample (n = 343): results of logistic regression*

Factor	Step 1[a]		Step2[a]	
	B (±S.E.)	OR (95% CI)	B (±S.E.)	OR (95% CI)
Parents	0.002 (± 0.005)	1.0 (0.91 to 1.10)	−0.14 (±0.009)	0.87 (0.74 to 1.04)
Loneliness[b]	0.11 (± 0.06)	1.12 (0.99 to 1.26)	−0.12 (±0.13)	0.89 (0.69 to 1.14)
Parents × loneliness			0.04 (± 0.021)	1.04 (1.00 to 1.09)*
Goodness of fit		$\chi^2(4) = 6.79$		$\chi^2(1) = 4.21$*
Nagelkerke R^2		0.027		0.044
Loneliness	0.08 (± 0.06)	1.08 (1.00 to 1.22)	−0.49 (±0.29)	0.61 (0.35 to 1.08)
Locus of control	0.26 (± 0.12)	1.30 (1.03 to 1.65)*	−0.13 (±0.23)	0.88 (0.56 to 1.38)
Loneliness × locus of control			0.12 (± 0.06)	1.13 (1.00 to 1.27)*
Goodness of fit		$\chi^2(4) = 11.38$*		$\chi^2(1) = 4.12$*
Nagelkerke R^2		0.04		0.062
Satisfaction				
Satisfied		1.00		1.00
Unsatisfied	0.20 (± 0.36)	1.22 (0.60 to 2.47)	−1.55 (±0.84)	0.21 (0.04 to 1.10)
Without a partner	0.27 (± 0.26)	1.31 (0.78 to 2.19)	−0.84 (±0.56)	0.43 (0.14 to 1.30)
Parents	0.000 (± 0.05)	1.00 (0.91 to 1.10)	−0.13 (±0.07)	0.88 (0.76 to 1.02)
Satisfaction × parents				
Satisfied				1.00
Unsatisfied			0.27 (± 0.11)	1.31 (1.05 to 1.64)*
Without a partner			0.19 (± 0.09)	1.21 (1.02 to 1.45)*
Goodness of fit		$\chi^2(4) = 4.08$		$\chi^2(2) = 7.67$*
Nagelkerke R^2		0.016		0.04

[a]Adjusted for age and gender.
[b]Emotional loneliness.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
χ^2-statistics indicate significance of the full model for Step 1 and significance of addition of the interaction for Step 2.
LOC, locus of control

loneliness. Parental network can provide at least two types of social support – emotional attachment (usually provided by close partner relations) and guidance (Heinrich & Gullone, 2006). Although we did not study the quality of parental relations, our findings suggest that parental guidance in form of trustworthy advice could encourage help-seeking especially in cases when support from other sources is inadequate.

As emotional loneliness was important in more than one interaction, it seems to be central for understanding the association of the social support with help-seeking in depressed persons. Lonely people have been found to use more health care resources, especially crisis services, than non-lonely people (Heinrich & Gullone, 2006). In a situation of a relatively low level of emotional distress, social support could decrease the probability of help-seeking (Shebourne, 1988). Considering significance of external LOC found in this study, it can be speculated that in the case of higher interpersonal distress indicated by emotional loneliness and perceived lack of personal coping resources, social support from an alternative close network could increase help-seeking in depressed persons.

A limitation of the present study is focus on a rather narrow selection of the functional and structural factors of social support and neglect of other possible factors of the same construct that could influence health (Berkman *et al.* 2000). A major strength of the study is the extensive representative sample, which allows estimation of links between social support factors, depression and help-seeking on the population level.

Conclusions

Depression is associated with structural and functional factors of social support and external locus of control. Depression-related loneliness does not in itself facilitate help-seeking but appears to be significant in combination with support from some part of the relationship network or a personality disposition of reliance on external resources.

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Conflict of Interest

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Appendix

I Structural factors of social support

Household size.
How many members are there in your household?

Cohabitation.
What is your marital status?

1 Never married/lived in unmarried partnership
2 Married
3 Unmarried partnership
4 Divorced
5 Separated
6 Widowed

The categories *never married/lived in unmarried partnership, divorced, separated, and widowed* were regarded as *no cohabitation* and the categories *married* and *unmarried partnership* as *cohabitation.*

Frequency of contacts outside the home.
Please tell with whom you communicate and/or meet during your free time and how often?

TAKE INTO ACCOUNT ONLY THOSE NOT LIVING IN THE SAME HOUSEHOLD WITH THE RESPONDENT.

	Do not meet/ communicate at all	At least once a year but not every month	Several times a month but not every week	Every week	Every week but not every day	Every day	Inapplicable
A) Own parents or grandparents	1	2	3	4	5	6	1
B) Partner's parents or grandparents	1	2	3	4	5	6	1
C) Son or daughter	1	2	3	4	5	6	1
D) Son- or daughter-in-law (or partner of a grown-up child)	1	2	3	4	5	6	1
E) Grandchild	1	2	3	4	5	6	1
F) Sister or brother	1	2	3	4	5	6	1
G) Other relative	1	2	3	4	5	6	1
H) Friend	1	2	3	4	5	6	1
I) Colleague or study-mate	1	2	3	4	5	6	1
J) Neighbour, acquaintance	1	2	3	4	5	6	1

Three main groups of contacts were formed:

Communication with parents/siblings (A, B, F)
Communication with children (C, D, E)
Communication with friends and other persons (G, H, I, J)

The group scores were calculated by summing the scores of respective items.

Membership in organizations.
Are you a member of any organization, association/union or a group in the list?

Persons who reported membership of at least one organization out of 11 categories of different organizations were categorized as member of an organization.

II Functional factors of social support

Emotional satisfaction with couple relationship.
How satisfied are you with the emotional relations with your spouse/partner?

Satisfied
Rather satisfied
Rather not satisfied
Not satisfied at all
Without a partner (the persons who answered having no partner).

The categories *satisfied* and *rather satisfied* were united into the category *satisfied*, and the categories *rather not satisfied* and *not satisfied at all* were regarded as *unsatisfied.*

The persons who answered *having no partner* were also included in the analysis as a separate category.