Occupational Factors and Characteristics of the Social Network in People With Persistent Mental Illness

Mona Eklund

Associations between occupational factors and characteristics of the social network in people with persistent mental illness were investigated. Participant groups (N = 103) representing three types of daily occupations—working or studying, visiting community-based activity centers, and having no regular daily occupation—were selected for the study. Participants were assessed regarding social interaction and on the occupational factors of time spent in productive occupations, activity level, satisfaction with daily occupations, and perceived occupational value. The groups based on daily occupation did not differ in social interaction. Associations were found mainly between the subjective estimations of occupation—satisfaction and perceived value—and characteristics of the social network. In conclusion, experiential aspects of occupation were more closely related to social interaction than actual circumstances, such as type of daily occupation or time spent in productive occupations. The results suggest that occupational therapists should focus their attention on the patient's participation in a supportive social network because it may be related to valued and satisfying occupations.


Introduction

A crucial question for occupational therapists and occupational therapy researchers is the benefit that may result from engagement in daily occupations. One desired outcome is better health, and several occupational therapy researchers have endeavored to characterize the relationship between occupation and health in people with persistent mental illness (Aubin, Hache, & Mercier, 1999; Eklund, Hansson, & Ahlgqvist, 2004; Eklund, Hansson, & Bejerholm, 2001; Goldberg, Britnell, & Goldberg, 2002). Although findings are contradictory, it seems relatively clear that satisfaction associated with daily occupation is related to different aspects of health in people with mental illness. More specifically, the occupational factors that have been shown to be related to health-related variables are satisfaction with daily occupations (Aubin et al., 1999; Eklund, 2004; Eklund et al., 2001), perceived occupational meaning (Goldberg et al., 2002; Strong, 1998), and the value attached to daily occupations (Eklund, Erlandsson, & Persson, 2003), where higher ratings were associated with better health.

An improved social network is another possible outcome of participating in daily occupations. It is well established that one's personal social network plays an important role in the development of morbidity and mortality (Berkman, Glass, Brisette, & Seeman, 2000; Hawe, Webster, & Shiell, 2004) and is fundamental for participation in society (World Health Organization [WHO], 2001). Therefore, the link between occupation and different characteristics of the social network is of interest from an occupational therapy perspective. Occupational therapists need to know which aspects of occupation they should focus on with the patient in order to enhance his or her social network. The body of knowledge on this topic is limited, however, and needs to be expanded.

More than two decades ago Henderson and associates (Henderson, Duncan-Jones, Byrne, & Scott, 1980) criticized sociological approaches to social networks for paying too much attention to structure and not enough to the affectional...
content of relationships. They suggested that attachment, as described by Bowlby (1969), should be included in the construct social network, together with acknowledgment of a person’s entire range of social relationships. A more recent review (Berkman et al., 2000) arrived at a similar conclusion, arguing that combining Durkheim’s sociological approach, which emphasizes societal norms and values, with Bowlby’s psychoanalytical model, which focuses on close and emotionally important relationships, provides a basis for understanding how social networks affect health. According to Hawe et al. (2004) social networks may be classified into different types, for example, socio-centric (the relational ties between members of a bounded community) or ego-centric (defined from a focal actor’s perspective only). This study focuses on the ego-centric type.

Studies of social networks of patients with severe mental illness have included aspects such as size, density, and multiplexity (Goldberg, Rollins, & Lehman, 2003). Network sizes have been found to be small (Macdonald, Hayes, & Baglioni, 2000; Nelson, Hall, Squire, & Walsh-Bowers, 1992) and research into levels of density in social networks—that is, the degree of interconnectedness—has yielded inconsistent findings, with evidence of both higher and lower levels of density than patients who are non-psychotic (Hammer, Makiesky-Barrow, & Gutwirth, 1978). High density probably reflects a high degree of expressed emotions, which is regarded as detrimental for the course of illness (Bebbington & Kuipers, 1994). In comparison to healthy individuals, the proportion of family members is greater and the relations to network members are less complex and asymmetric (Hirschberg, 1988; Sörgaard et al., 2001). Characteristics of the social networks of people with mental illness have been shown to be important for recovery (Davidson et al., 2001; Young & Ensing, 1999), a good quality of life (Barry & Zissi, 1997; Bengtsson-Tops & Hansson, 2001), functional status (Howard, Leese, & Thornicroft, 2000), and community adaptation (Becker, Albert, Angermeyer, & Thornicroft, 1997; Clinton, Lunney, Edwards, Weir, & Barr, 1998).

The type of daily occupation that has been most widely stressed in relation to social networks in people with mental illness is competitive work. Rüesch, Graf, Meyer, Rössler, and Hell (2004) presented a structural equation model with a good fit in which occupation in the sense of having paid work was related to quality of life, and social support served as a mediator of this relationship. A small direct relationship was also found between occupation and quality of life domains referring to social interaction, but not to psychological and physical well-being. Another study revealed that frequent contacts with the social network were associated with higher engagement in productive activities, such as work and studies (Collins, Mowbray, & Bybee, 2000). Evert, Harvey, Trauer, and Herrman (2003) showed that competitive work was more common among those who had a family-dominated social network than among those who had friends-dominated networks or who were socially isolated. Although having a job is considered to facilitate the building of social networks and social inclusion (Evans & Repper, 2000), studies investigating the relationship between work and social interaction suggest that these are mainly separate indicators of community adjustment with only low intercorrelations (Rüesch et al., 2004; Scheid, 1993).

Studies focusing on associations between daily occupations in a broad sense and the social network are scarce, but Evert et al. (2003) found that not only work, but also self-care, was linked to characteristics of the social network. Another study showed that both paid work and satisfaction with leisure activities, together with global functioning, distinguished people who scored high from those who scored low regarding social interaction (Sörgaard et al., 2001). Moreover, a recent study (Leufstadius, Erlandsson, & Eklund, in press) focused on time usage of persons with mental illness and showed that the total time spent in daily occupations was related to better ratings of social interaction. A circadian rhythm that reflected being occupied during the daytime and resting during the nighttime was also advantageous for social interaction. Another study of persons with schizophrenia showed that different types of social integration were associated with how day-structuring services were used (Kilian, Lindenhuch, Löbig, Uhle, & Angermeyer, 2001).

More knowledge about which aspects of daily occupation are associated with the quality and the quantity of the social network would serve as a basis for occupational therapists in determining how to develop social support programs for people with mental illness. Thus, the present study was aimed at exploring the relationship between occupational factors—such as type of daily occupation, time spent in productive occupations, general activity level, satisfaction with daily occupations, and the value attached to performed occupations—and aspects of the social network in a group of participants with persistent mental illness.

Methods and Subjects

Selection Procedure

People with severe mental illness, mainly schizophrenia and other psychoses, were selected for the study. The participants were chosen from an outpatient unit and further inclusion criteria were duration of care contact of at least 2
years and an age of 20 to 55 years. Co-morbidity of developmental delay or dementia, being sentenced to psychiatric care, and being too confused to participate were exclusion criteria. In order to obtain a sample in which people with competitive work or regular studies were represented, no further limitations concerning conditions were imposed.

About 400 patients who matched the criteria for inclusion were registered at the unit. They were first grouped into three strata according to type of employment and work situation: (a) those who spent 10 or more working hours per week in competitive work or studies, (b) those who spent 10 or more hours per week in community-based activity centers, and (c) those who had no regular structured daily activity of at least 10 hours per week. The grouping in strata was based on a rating according to these three criteria made by the psychiatrist in charge of the respective patient. The psychiatrists in charge also diagnosed the patients according to the ICD-10 Classification of Mental and Behavioural Disorders (WHO, 1993).

A power analysis indicated that 35 subjects were required from each stratum. On the basis of the response rate in earlier studies on similar samples, which tends to be 55% to 65% (Bengtsson-Tops et al., 2005; Eklund et al., 2001), it was estimated that 50 to 55 individuals should be selected from each stratum. In all, 176 eligible patients had to be asked to participate before the desired sample size of 35 individuals from each stratum was reached, resulting in a participation rate of 60%. An analysis showed that the participants were somewhat younger than the nonparticipants (39/42 years of age, \( p = 0.021 \)) and that there were fewer women (45%/61%, \( p = 0.04 \)). There was no difference between participants and nonparticipants regarding condition. Written consent was obtained from all participating patients and the local research ethics committee approved the study.

Participants

The participants from the three strata formed three occupational groups engaged in different kinds of daily occupations. Group I comprised persons occupied with competitive work or studies, whereas Group II comprised persons with no regular daily activity. Results from a previous study on a similar sample (Bejerholm & Eklund, 2004) showed that the participants tended to spend most of their time alone in their homes, performing quiet occupations such as sitting and watching or consuming mass media. Although developmental disorder was an exclusion criterion in the present study, two participants had this condition because all diagnoses of conditions had not been confirmed at the time of data collection. These participants were excluded from the study, which meant that Groups I and III included only 34 persons each. The participants were classified into three diagnostic subgroups, one with schizophrenia and other psychoses (F20–F29); another with mood disorders and neuroses (F30–F39 and F40–F48); and a mixed third group, where personality disorders and Asperger syndrome were the most common conditions. The distribution of conditions differed significantly between the three groups based on occupational situation (\( p < 0.0005 \)). Mood disorders and neuroses were more common among patients engaged in competitive work or studies and less common among patients participating in community-based activity centers, whereas the opposite was found for schizophrenia and other psychoses. The occupational groups did not differ regarding age, gender, civil status, or whether they lived with their own children. Some characteristics of the three groups are given in Table 1.

### Instruments

#### Occupational Factors

One aspect of occupation was the occupational group that resulted from the selection procedure. Further aspects of occupation were assessed as follows.

Time spent in productive occupations was estimated through self-report regarding number of hours spent on work, studies, home chores, and participation in day activities.

<table>
<thead>
<tr>
<th>Table 1. Characteristics of the Participants</th>
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<tbody>
<tr>
<td>Group I (n = 34)</td>
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<tr>
<td>------------------</td>
</tr>
<tr>
<td>Gender (male/female)</td>
</tr>
<tr>
<td>Mean age</td>
</tr>
<tr>
<td>Married or cohabiting</td>
</tr>
<tr>
<td>Living with their own children</td>
</tr>
<tr>
<td>ICD-10 diagnoses</td>
</tr>
<tr>
<td>F20–F29 (schizophrenia, schizotypal, and delusional disorders)</td>
</tr>
<tr>
<td>F30–F39 (mood disorders) or F40–F48 (neurotic, stress-related, and somatoform disorders)</td>
</tr>
<tr>
<td>Mixed, most often F60–F69 (disorders of adult personality and behavior) or F80–F89 (disorders of psychological development)</td>
</tr>
</tbody>
</table>

1. Group I = those with competitive work or regular studies. 2. Group II = those visiting community-based activity centers. 3. Group III = those with no regular daily activities. Note. ICD-10 = The ICD-10 Classification of Mental and Behavioural Disorders (World Health Organization, 1993).
centers. This study concentrated on two time aspects—the total time spent in productive occupations and the time spent on work or studies.

Satisfaction with daily occupations was assessed by means of an interview-based instrument. Satisfaction with Daily Occupations (SDO) has recently been shown to have satisfactory internal consistency, construct validity, and discriminant validity (Eklund, 2004; Eklund & Sandqvist, 2006). It consists of nine items targeting different areas of occupational performance, including work, leisure, home chores, and self-care. Two different scores are obtained, a satisfaction score, ranging from 1 = worst possible to 7 = best possible, and a score that reflects activity level (i.e., the number of occupational areas in which the respondent is presently engaged). Both aspects of occupation were used in this study.

To assess the value attached to performed occupations, or occupational value, a newly developed instrument was used: the assessment of Occupational Value with pre-defined items (OVal-pd), which is based on self-ratings and described further in Eklund, Erlandsson, and Persson (2003). This psychometrically sound questionnaire has been found to have good internal consistency and construct validity (Eklund et al., 2003). The OVal-pd comprises 26 predefined items in the form of statements describing situations associated with different types of occupational value, namely concrete, symbolic, and self-reward value. Examples of statements intended to reveal concrete value are “Something important was done” and “I was pleased with the result.” Some items that reflect symbolic values are “It is a tradition” and “I felt I could be myself.” Self-reward items are, for example, “I forgot time and where I was” and “It was a real pleasure.” The respondent rates how frequently he or she has experienced real situations characterized by the value reflected in the item. A 4-point scale (from 1 = never to 4 = very often) is used.

Social Network
The construct social network was evaluated by means of the Interview Schedule for Social Interaction (ISSI) (Henderson et al., 1980), which is based on self-report and addresses both close relationships fundamental to human development (attachment) and broader social interaction important for participation in society (social integration). Quantities (availability) and qualities (adequacy) of these dimensions are assessed. Thus, four subscales are obtainable: availability of social integration and availability of attachment, which reflect quantitative aspects of the social network; and adequacy of social integration and adequacy of attachment, indicating qualitative aspects. A brief Swedish version of the scale was used (Undén & Orth-Gomér, 1989). The ISSI has shown good psychometric properties in terms of internal consistency, split-half reliability, construct validity, and discriminant validity (Undén & Orth-Gomér, 1989).

Statistics
Regarding the ISSI, all questionnaires in which >75% of the items had been answered were included in the analysis in order to decrease the number of dropouts, resulting in only 1 participant being lost. For the remaining 102 participants, in the case of missing responses, imputation with the participant’s mean value was used. Scores for the four subscales were computed and included in further analysis. For descriptive purposes, the total score was also calculated.

Most data formed ordinal scales; therefore, nonparametric statistics were considered appropriate. Differences between the three occupational groups regarding social interaction were calculated by means of the Kruskal-Wallis H-test. Associations between variables were assessed with Spearman rank order correlations. A series of logistic regression analyses, forward conditional model, with the social interaction subscales as dependent factors, was subsequently used to determine which occupational factors had the strongest association with social interaction. The subjects were divided into a high group and a low group regarding each aspect of social interaction, using a median cut. The ordinal scales were used for the independent variables. Also, in these analyses, diagnostic group was entered as an independent variable, in order to check for the influence of diagnosis. A p-level of .05 was set for inclusion and .1 for exclusion of variables. The software used was the SPSS statistical package, Version 11.5.

Results
Table 2 shows how the three occupational groups rated their social interaction. As is obvious from the table, the groups did not differ in any aspect of social interaction.

Some statistically significant associations were found between the other occupational factors and social interaction (see Table 3). Occupational value was related to all aspects of social interaction except availability of attachment and especially to adequacy of social integration. Satisfaction with daily occupations showed associations with availability of attachment and adequacy of attachment. Activity level, as well as total time spent in productive activity, was significantly related to availability of social integration. Time spent on work or studies was not related to any aspect of social interaction.

The results of the logistic regression analyses showed that a low level of perceived occupational value and being in
the mixed diagnostic group, composed mainly of personality disorders and Asperger syndrome, were related to an increased risk of belonging to the low-score group regarding availability of social integration (see Table 4). As can be seen in Table 4, diagnosis alone did not reach statistical significance, but together these variables formed a model with $p = .039$; that is, a better model than occupational value alone. Lower levels of occupational value were also related to a greater risk of being in the low-score group regarding availability of attachment, whereas lower levels of satisfaction with daily occupations increased the risk of belonging to the low-score group regarding adequacy of social integration. None of the independent variables was related to adequacy of attachment in the logistic analysis. Regarding the total ISSI score, lower levels of satisfaction with daily occupations increased the risk of belonging to the low-score group.

### Discussion

There was no difference between the occupational groups regarding quantitative or qualitative aspects of social network. The results confirm findings from a previous study showing that these three groups based on different types of daily occupations differed only marginally with respect to how they perceived their well-being (Eklo et al., 2004). The results also support previous assumptions that work and social interaction constitute separate and only weakly correlated indicators of community adjustment (Rüesch et al., 2004; Scheid, 1993).

Interestingly, the more objective aspects of occupation showed little or no relation to the social network. The only findings were in the bivariate correlations where activity level and total time spent in productive occupations both were related to availability of social integration, which is a quantitative characteristic of the social network. On the other hand, the more subjective aspects of occupation—satisfaction and perceived value—were clearly linked to aspects of the social network. The bivariate correlations showed that perceived occupational value was related to all aspects of the social network except adequacy of social integration. The strongest relationship was with a quantitative aspect, namely availability of attachment, which was corroborated in the logistic regression analyses. Regarding satisfaction with daily occupations, the strongest association was with adequacy of attachment, a qualitative social network component. This finding was also confirmed in the regression analyses, which in addition showed that satisfaction with daily occupations had the strongest relationship to the total social network (ISSI) score. The bivariate correlations

### Table 2. The Three Occupational Groups' Ratings of the Social Network

<table>
<thead>
<tr>
<th></th>
<th>Group I Mean (SD)</th>
<th>Group II Mean (SD)</th>
<th>Group III Mean (SD)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of social integration</td>
<td>2.3 (1.8)</td>
<td>2.1 (1.5)</td>
<td>1.6 (1.6)</td>
<td>.212</td>
</tr>
<tr>
<td>Availability of attachment</td>
<td>4.5 (1.7)</td>
<td>4.5 (1.5)</td>
<td>4.3 (1.6)</td>
<td>.761</td>
</tr>
<tr>
<td>Adequacy of social integration</td>
<td>4.3 (2.7)</td>
<td>4.7 (2.3)</td>
<td>4.2 (2.5)</td>
<td>.636</td>
</tr>
<tr>
<td>Adequacy of attachment</td>
<td>6.1 (3.3)</td>
<td>5.8 (2.9)</td>
<td>5.9 (2.7)</td>
<td>.865</td>
</tr>
<tr>
<td>Total ISSI score</td>
<td>16.9 (6.8)</td>
<td>16.7 (6.3)</td>
<td>15.4 (5.5)</td>
<td>.516</td>
</tr>
</tbody>
</table>

1 Group I = those with competitive work or regular studies. 2 Group II = those visiting community-based activity centers. 3 Group III = those with no regular daily activities. Note. ISSI = Interview Schedule for Social Interaction (Henderson et al., 1980).

### Table 3. Correlations Between Occupational Factors and Ratings of the Social Network

<table>
<thead>
<tr>
<th>Occupational value</th>
<th>Satisfaction with daily occupations</th>
<th>Activity level</th>
<th>Total time in productive occupations</th>
<th>Time spent on work or studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of social integration</td>
<td>.23**</td>
<td>.17</td>
<td>.2*</td>
<td>.28**</td>
</tr>
<tr>
<td>Availability of attachment</td>
<td>.46***</td>
<td>.13</td>
<td>.12</td>
<td>.18</td>
</tr>
<tr>
<td>Adequacy of social integration</td>
<td>.15</td>
<td>.28**</td>
<td>.002</td>
<td>.07</td>
</tr>
<tr>
<td>Adequacy of attachment</td>
<td>.25*</td>
<td>.39**</td>
<td>.02</td>
<td>.08</td>
</tr>
<tr>
<td>Total ISSI score</td>
<td>.34***</td>
<td>.31***</td>
<td>.07</td>
<td>.19</td>
</tr>
</tbody>
</table>

*p = .05, ** = p < .01, *** = p < .001. Note. ISSI = Interview Schedule for Social Interaction (Henderson et al., 1980).
showed a slightly higher coefficient for occupational value and, considered together, the analyses suggest two things. One is that the two subjective ratings of daily occupation, satisfaction and perceived value, showed similar associations with the social network as a whole, but somewhat different patterns of associations to the different subscales. The other is that satisfaction with daily occupations seemed to be more closely related to qualitative aspects and occupational value more associated with quantitative aspects of the social network. However, these results need to be corroborated in further studies before any firm conclusions can be drawn.

The odds ratio for the influence of occupational value on availability of attachment was relatively high and highly significant, indicating that the value attributed to daily occupations was strongly associated with the number of emotional relationships. This, in turn, renders a new facet to occupational value, which is a construct that needs further validation (Eklund et al., 2003; Persson, Erlandsson, Eklund, & Iwarsson, 2001).

Condition marginally influenced availability of social integration, but no other aspect of the social network. Interestingly, the mixed group was identified as that with the smallest social network. Previous research has shown that people with schizophrenia and other psychoses have a reduced social network in comparison to other groups (Bengtsson-Tops & Hansson, 2001; Nelson et al., 1992). The conditions represented in the mixed group, mainly people with personality disorders and Asperger syndrome, seem not to have been compared to other psychiatric groups. Set against previous studies based on the ISSI, the sample described in this study rated their social network as expected. This sample, with a large proportion of people with schizophrenia and other psychoses, showed better ratings than a sample with a diagnosis of schizophrenia only (Bengtsson-Tops & Hansson, 2001), but worse ratings than patients with schizoaffective disorder (Nettelbladt, Svensson, Serin, & Öjehagen, 1995) and considerably poorer levels than healthy individuals (Bengtsson-Tops & Hansson, 2001; Nettelbladt et al., 1995).

The fact that the sample showed expected levels regarding both the quantitative and the qualitative aspects of the social network suggests that the findings of relationships between occupational variables and the social network may be valid for other samples from similar populations. However, this study had some methodological shortcomings against which the results must be weighed. This was a cross-sectional study and no causal relationships could be established. There was a fairly large attrition rate, but on the other hand there were no substantial differences between the participants and the nonparticipants. The attrition rate was similar or even better than comparable studies (Bengtsson-Tops et al., 2005). The main reasons for the high attrition rate were probably: (a) the target group of people with severe mental illness and low levels of functioning, and (b) the fact that data were not collected in connection with care visits, but required a specific appointment at the outpatient unit. Another methodological issue pertains to the fact that the limit of 10 working hr a week for inclusion in Groups I and II was quite arbitrary. It is possible that some differences might have appeared between occupational Groups II and III if the limits had been set differently; for example, at 20 hr per week. Future studies should investigate whether there are any such critical limits for experiencing satisfaction with daily occupations. A critical voice could also be raised as to how social network was assessed in this study. The ISSI does not address issues such as the individual's position within the network, relationships between other network members, and the density of the network, which should be included in a more comprehensive quantitative description such as a social network analysis (Hawe et al., 2004). Compared to a social network analysis, only limited aspects of the social network were investigated, in terms of social integration and emotionally important relationships. On the other hand, the use of the ISSI provided both quantities and qualities of these aspects and was in agreement with recent recommendations on the conceptualization of social networks (Berkman et al., 2000). Moreover, only certain facets of occupation were targeted, and the study should be regarded as a first and tentative description of the association between daily occupations and characteristics of the social network.

In conclusion, the results of this study indicate surprisingly similar levels of availability and adequacy of the social network for the three groups with different occupational conditions. Thus, the formal occupational situation of an individual, such as having competitive work or not, may be of less relevance for the quantity and quality of the social network. However, subjective perceptions of daily occupations—satisfaction with daily occupations and occupational value—were moderately but clearly related to characteristics of the social network. In that respect, the relationships found resembled those found in research on relationships between occupation and health (Aubin et al., 1999; Eklund et al., 2001, 2004; Goldberg et al., 2002). Promoting a better social network seems to be an urgent task in mental health care, because research has shown that community adjustment (Clinton et al., 1998), quality of life (Barry & Zissi, 1997; Bengtsson-Tops & Hansson, 2001), and recovery from illness (Davidson et al., 2001; Young & Ensing, 1999) may be enhanced by a well-functioning social network. The finding in the present study, that subjective aspects of daily occupations were related to characteristics of
the social network, may be applied in occupational therapy practice. The results suggest that occupational therapists should focus their attention on the patient’s participation in a supportive social network, because this may be related to his or her perceptions of valued and satisfying occupations. The importance of social networks means that occupational therapists may need to consider assisting patients in gaining access to a supportive social network or building the skills necessary to participate in a social network. Occupational therapists may thereby also need to access methods for evaluating and enhancing participation in a social network, in addition to addressing other factors related to the patient’s valued occupations. The ISSI assessment used in this study may serve as a useful tool in clinical practice as well, and may be used as an indicator of which aspects of the social network need to be strengthened.

Finally, this study gave some implications for further research. The findings strengthen the well-established occupational therapy belief of a relationship between meaningful occupation and desired heath and development goals, and add social network to these goals. More complete investigations to increase our knowledge of the specific associations between daily occupation and participation in social networks need to be performed. Research so far has generally failed to establish relationships between formal, objective components of occupation and health and development goals, but there is increasing evidence that the benefits derived from occupation depend on how it is perceived by the doer. Future research should address whether this will be a consistent finding also when studying the relationship between occupation and participation in a social network. ▲

Acknowledgments

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References


