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\*Corresponding author: Anette Skårner, Department of Social Work, University of Gothenburg, PO Box 720, SE 405 30 Gothenburg, Sweden  
E-mail: [Anette.Skarnar@socwork.gu.se](mailto:Anette.Skarnar@socwork.gu.se)

Reviewing editor:  
Carmen Rodríguez-Blázquez,  
Instituto de Salud Carlos III, Spain

Additional information is available at  
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## CLINICAL PSYCHOLOGY & NEUROPSYCHOLOGY | RESEARCH ARTICLE

# Conceptual and theoretical framework of the MAP-NET: A social networks analysis tool

Anette Skårner<sup>1\*</sup> and Arne Gerdner<sup>2</sup>

**Abstract:** Social network factors constantly recur as central to explaining initiation, continuation and cessation of substance use and maintenance of long-term recovery. MAP-NET (Measure and Analysis of Personal NETWORK) is a computerised instrument for assessing the personal social networks (PSN) of persons with substance misuse and related problems, and it is designed to be used in clinical interviews and to provide relevant measures for research. The article focuses on the conceptual and theoretical framework of MAP-NET and how it is operationalised. The MAP-NET interview makes it possible to identify problems and resources both in general and in relation to the specific circumstances that can be attributed to substance misuse. It provides a basis for a faceted analysis of structural, interactional and functional aspects of PSN—and how these interact. MAP-NET offers possibilities for longitudinal studies on how social networks develop over time and how this relates to substance use as well as to recovery with or without treatment. Implications for network-oriented psychosocial interventions are suggested.

**Subjects:** Environmental Psychology; Computerised Testing; Psychiatry and Clinical Psychology - Adult; Community Psychiatry and Rehabilitation; Addiction - Alcohol - Adult;



Anette Skårner

### ABOUT THE AUTHORS

Anette Skårner is an associate professor of social work at the University of Gothenburg, Sweden. She has conducted several research projects in the area of substance use and applies an interactionist perspective in her research. Some of the themes focused on are the following: social networks and social support, drug use and sexuality, young people and drugs, affected family members and the client-counsellor relationship in drug treatment.

Arne Gerdner is a professor of social work at Jönköping University, School of Health and Welfare, Sweden. His clinical research is primarily on alcohol- and drug-dependent persons with severe psychiatric comorbidity and social problems. His epidemiological research is on adolescents, concerning substance use, emotional health and social relations. Thus, his studies on substance use and social networks relate both to the development of and the rehabilitation from addiction.

### PUBLIC INTEREST STATEMENT

Social relations are central resources, yet sometimes complicating factors, to handle various life problems, including substance misuse. Social network factors constantly recur as central to explaining initiation, continuation and cessation of substance use and maintenance of long-term recovery. Recovery is often a prolonged and complicated process in which the role of the personal social network (PSN) may vary during different phases. This article focuses on the conceptual and theoretical framework of MAP-NET (Measure and Analysis of Personal NETWORK), a new computerised instrument for assessing the PSN of persons with substance misuse and related problems. It is designed to be used in clinical interviews and to provide relevant measures for research. The MAP-NET interview makes it possible to identify problems and resources both in general and in relation to the specific circumstances that can be attributed to substance misuse and the role of treatment in the recovery process.

**Addiction - Drugs - Adult; Clinical Social Work; Counseling; Assessment Tests and Diagnosis; Social Work and Social Policy**

**Keywords: personal social networks; network map; social support; substance misuse; ego-centric; computerised assessment**

### 1. Introduction

MAP-NET (Measure and Analysis of Personal NETWORK) is a computerised instrument for assessing the personal social networks (PSN) of persons with substance misuse and related problems, and it is designed to be used in clinical interviews and to provide relevant measures for research. It is based on multidisciplinary work involving social work and computer science. The article aims to describe and discuss the conceptual and theoretical framework of MAP-NET and how it is operationalised. The technical aspects of the project are presented in Holmberg and Håkansson (2016). The validation strategies, and the results of these, are presented in Gerdner, Skårner, Holmberg and Håkansson (*in press*).

The central idea behind MAP-NET is that the process into and out of substance misuse is embedded in social settings and involves social relationships around the substance user (Orford, Velleman, Natera, Templeton, & Copello, 2013; Skårner, 2001). Social network factors constantly recur as central to explaining initiation, continuation and cessation of substance use and maintenance of long-term recovery (Zywiak et al., 2009). Meaningful and supportive social relations are highlighted as important in (re)structuring a stable drug-free life and identity (Best, Ghufuran, Day, Ray, & Loaring, 2008, 2011; Biernacki, 1986; Granfield & Cloud, 1999, 2001; Laudet & White, 2008; Litt, Kadden, Kabela-Cormier, & Petry, 2009; McIntosh & McKeagany, 2002; Neale, Nettleton, & Pickering, 2012; Skogens & Von Greiff, 2014). Constructive social network support has been shown to have a positive impact on the willingness of misusing persons to seek professional help and on the treatment outcome, and it tends to reduce the risk of relapse and premature drop-out of treatment (Copello & Orford, 2002; Copello, Orford, Hogdon, Tober, & Barrett, 2002; Day et al., 2013; Dobkin, De Civita, Paraherakis, & Gill, 2002; Frank et al., 2001; Gerdner, Furuholm, & Berglund, 1997; Möller, Gerdner, & Oscarsson, 1998; Kidorf, Latkin, & Brooner, 2016; Day et al., 2013).

The impact of social relations on misuse problems and their management is complex, however, and includes both enabling and obstructive aspects. Access to a social network is not per se supportive. Network members (NMs) may suffer from own misuse or other mental health or behavioural problems (McCrary, 2004; Copello, Templeton, Orford & Velleman, 2010; Orford et al., 2013). Relations can be strained, conflictful or distanced due to misuse or related problems that affect the availability of support (Kim, Davis, Jason, & Ferrari, 2006; Skårner, 2001; Sun, 2007; Tracy, Munson, Peterson, & Floersch, 2010). Studies of families of misusing persons show the negative impact on the health and quality of life of related persons and the relationship between the two. Conflicts, mistrust and feelings of guilt are reoccurring themes (Andersson & Skårner, 2015; Arcidiacono et al., 2010; Moos, Finney, & Croncrite, 1990; Orford et al., 2013; Usher, Jackson, & O'Brien, 2007).

In summary, previous research gives support to both the importance and the complexity of social network factors associated with substance misuse. A variety of social network characteristics may play central roles in recovery, and social NMs can both support and undermine the process.

There are instruments for screening and assessing social support as well as for investigating the availability of social networks (Alemi et al., 2003; Laireter, Bauman, Feichtinger, Reizenzein, & Untner, 1997; O'Reilly, 1988; Tracy & Abell, 1994; Undén & Orth Gomér, 1989; Wasserman & Faust, 1994; Zimet, Powell, Farley, Werkman, & Berkoff, 1990), but few such instruments describe and analyse networks in their complexity, including structural, interactional and functional aspects, and even fewer ensure the validity and reliability of the measures (these are reviewed in Gerdner et al., *forthcoming*). MAP-NET is designed to fill this gap.

## 2. Conceptual and theoretical background

One branch of *social network research* deals with open (sociocentric) networks—often studied with sociograms—in which, for example, paths of spreading information or infections can be studied. Another branch deals with personal (ego-centric) networks, i.e. the network around a specific focal person (FP) (Bø, 1993; Scott, 2000; Valente, Gallaher, & Mouttapa, 2004). Within *social support research*, the social network factors are primarily studied as support for health and social functioning and as a buffer against stress (Vaux, 1988). There is no identifiable unitary theory on social networks. Rather, “social networks” is an analytical model to explore social relations in association with specific questions (Bø, 1993). From a social network perspective, it is possible to describe more accurately the context within which persons live and act (Llamas, Pattison, & Hurd, 1981; Wellman, 1981) or, to quote Marsella and Snyder (1981, p. 156), “The social networks model is a systems approach for describing, quantifying, and analyzing the complexities of the social milieu.”

The holistic perspective that the network model provides offers a framework for understanding complexity and dynamic interplay of social relationships. The relative significance of certain parts of networks is affected by the overall pattern of links (Skårner, 2001; Vaux, 1988). A strict focus on the global, however, leads to a risk of losing sight of specific relational aspects of the total structure. Hence, knowledge of individual links that constitute a network adds value to a structural network analysis (Morgan, 1990; Starker, Morgan, & March, 1993). The overarching definition of the concept PSN, the starting point for MAP-NET, comes from Marsella and Snyder (1981, p. 56):

*The network is the set of personal contacts through which the individual maintains his social identity and receives emotional support, material aid and services, information and new social contacts.*

A PSN is the sum of a person’s relationships that together constitute the social context of the individual, here called the FP. The NMs need not know each other, or even know of each other. Their common denominator is that they are significant to the FP. Unlike many other groupings, it is not possible to determine the exact size of a PSN. In theory, the network structure is endless, complicating the operationalisation of the concept. A common “empirical restriction” in mapping the PSN is the study being limited by the FP’s own nominations (Bø, 1993; Rice & Yoshioka-Maxwell, 2015). Moreover, depending on the object of the study, as well as what is practically viable, more precise specifications can be made based on content and function (cf. Milardo, 1992).

Social network research offers suggestions for classification and themes to be used in network analysis. The concepts used often come from the social anthropologist Clyde Mitchell’s (1969) distinction between *structural* (morphological) and *interactional* characteristics. The former focuses on the network as a whole, i.e. the form and pattern of the links. The latter focuses on individual links, their nature and quality. More recent research has also studied the *functional* characteristics, i.e. the significance of the NM’s actions (Cohen, Mermelstein, Kamarck, & Hoberman, 1985; Marsella & Snyder, 1981). Drawing on network and support research (e.g. Bø, 1993; Gottlieb & Bergen, 2010; Valente et al., 2004; Vaux, 1988) as a starting point, the following provides an outline of concepts utilised in the construction of MAP-NET.

### 2.1. Conceptual basis of MAP-NET

#### 2.1.1. Structural aspects

Size measures the number of persons constituting the PSN. MAP-NET uses the FP’s own subjective estimate of important relationships and not the number of people that the FP actually sees or has contact with. For practical reasons, MAP-NET accepts up to 20 NMs.

The PSN consists of various sectors. MAP-NET uses five sectors: (i) family, (ii) relatives, (iii) colleagues and neighbours, (iv) friends and acquaintances and (v) professional helpers.

*Density* refers to the interconnectedness between NMs. From the links, it is possible to distinguish various *clusters*, i.e. groups within which all NMs know each other, and to identify individuals

who hold particular positions in the network, *nexuses*, central characters who know many people in the network; and *isolates*, persons who are not connected to anyone in the network but the FP.

### 2.1.2. Interactional aspects

*Duration* and *frequency* focus on different dimensions of continuity in the relationships between the FP and the NMs: how long they have known each other and how often they are in touch.

The terms *intimacy* and *intensity* describe emotional closeness and load of the relationship. Put simply, the relationship can be described as positively, negatively or ambivalently loaded.

*Reciprocity* focuses on the level of mutuality in the relationship.

### 2.1.3. Functional aspects

*Social support* focuses on what the PSN is usually expected to provide, i.e. various forms of support, both in everyday life and in more problematic situations. MAP-NET maps four main forms of support: emotional, cognitive, practical and financial. The mapping includes support that the FP both receives from and provides to the NM.

*Community* and *belonging* are basic functions that the PSN is expected to fulfil in people's lives (Allan, 2008; Scheff, 1997) and include participation as well as the emotional experience of belonging. In line with Rook (1990), MAP-NET handles social support and belongingness/community as separate functions of interaction between the FP and the PSN.

*Access to new social contacts* describes the degree to which the FP, with the help of existing NMs, can renew the PSN. It is a key functional aspect for persons with substance misuse problems, since the exit process often demands restructuring of the PSN by replacing drug-related social relationships with drug-free ones (Best et al., 2014; Biernacki, 1986; Dingle, Stark, Cruwys, & Best, 2015).

A guiding principle when developing MAP-NET was to create the conditions for in-depth analyses of how function relates to form and quality. In line with an interactive network perspective (McCrary, 2004), the persons with substance misuse problems are not seen as passive recipients of support from their social networks but rather as “active agents within a network of social influences” (p. 117). In other words, a social network constitutes a dynamic system in which members act on and influence each other in an ongoing process over time.

Following others (e.g. Gottlieb & Bergen, 2010; Sarason & Sarason, 2009; Tracy & Abell, 1994; Wellman, 1981), we emphasise the importance of applying a network perspective to social support in order to provide the concept with meaning, since support is delivered in transactions between PSN members. NMs can function as potential support givers (and receivers), but relationships are complex and support is only one interaction among many (Lincoln, 2000). Thus, the PSN includes both supportive and non-supportive links and may also cause problems (La Gaipa, 1990; Willcox, 1981). An open approach that does not make assumptions about the supportive nature of relationships is recommended (Gordon & Zrull, 1991; Skårner, 2001; Tracy et al., 2010). People with substance misuse problems can have emotionally significant NMs who also engage in substance misuse, yet there may be a few people who can provide constructive support to exit from substance misuse.

## 3. MAP-NET—development and early experiences

Qualitative network research often uses a *network map* as a central instrument (Bø, 1993; Skårner, 2001; Tracy & Abell, 1994). A network map is also used in clinical assessment and treatment. It is interpreted together in dialogue between the interviewer and the FP. Variables are generated and measured by means of a network map, and additional modules are developed for this purpose that can also be used in quantitative studies. However, to use such an instrument in quantitative research requires a high degree of standardisation.

Four key principles have guided the process of developing the MAP-NET from the start: (1) the mapping of the PSN is based on the FP's own perspective; (2) a combined strategy (network map and interview) captures the subjective aspects of the structure, quality and function of the PSN and reduces the risk of excluding important persons; (3) there is focus on both examining the PSN as a whole and interactional aspects of individual relationships; and (4) there is focus on reciprocity regarding, for example, the mutual exchange of social support between the FP and the NMs.

MAP-NET was tested in a population of 113 adults with substance misuse problems recruited from various treatment facilities in Sweden (Gerdner et al., *forthcoming*). By visualising the information directly on the screen, the FP obtained immediate feedback from the interview and could directly correct faults and misunderstandings (Corman, 1990). Based on systematic documentation in an interview log, both the interviewers and the FPs expressed very positive comments in general on the interview, especially the way the dialogue and the visual outputs created an opportunity for reflection on the FP's past and present "social life" related to substance use, well-being, etc. One strength that was highlighted was that MAP-NET—unlike some other assessment tools—focuses on resources as well as problems. However, the critical comments indicated that many persons felt that the interview, as it was then, took too long.

The validation study (Gerdner et al., *in press*) shows that MAP-NET has satisfactory construct validity and acceptable to excellent internal consistency. It demonstrates convergent validity with other relevant scales and low sensitivity to social desirability. There is also substantial agreement with collateral interviews carried out with NMs who were chosen from those with most knowledge about the respective PSN (nexuses) and who were blind to the answers of the FP. Based on the validation study, a revision was made for the purpose of shortening the interview and making it more feasible. Factor analyses and tests of reliability showed that items could be reduced without losing measurement quality. Some questions could be omitted and the maximum accepted number of NMs was reduced to 20 in order to gain transparency. Altogether, MAP-NET was reduced by about 40% and now takes about 70 min to complete. Thus, MAP-NET has the qualities needed for clinical use and research.

#### 4. MAP-NET—structure and content

Since MAP-NET aims to analyse the impact of the PSN on the problem areas specific to the FP, it needs to capture personal problem areas as well as the network in its complexity with information on many levels. It is therefore quite an extensive instrument built on nine modules divided into four sections (See Table 1): Section A collects data on the FP, Section B defines the members of the

**Table 1. Sections and modules of MAP-NET**

**Section A: Data on the FP**

Module 1: Basic data on the FP

Module 2: Problem profile and motivation of the FP

**Section B: The composition of the PSN**

Module 3: Name-generating form of the NMs

Module 4: Network map

Module 5: Family and relations tree

**Section C: Interactional and functional aspects of the PSN**

Module 6: Interactional aspects

Module 7: Support and problem impact—functional aspects

**Section D: Data on the NMs and their internal connections**

Module 8: Basic data on the NMs

Module 9: Contact map

PSN, Section C explores the interactional and functional aspects of their relations to the FP and Section D investigates the social situations and interrelations among and between the NMs.

We will now run through the instrument and present and discuss how it is constructed and which variables are utilised to capture the various aspects of the network. Three of the visual outputs—network map, family and relationship tree, and contact map—will be introduced in context.

#### 4.1. Section A

*Module 1* includes basic data on the FP's demographic and social background. *Module 2* concerns severity in eight problem areas: work and economy, physical health, emotional health, social relations, alcohol, drugs, gambling and criminality, rated from no to severe problems. Those with problems were asked how these had changed in the past 3 years, scoring from much worse to much better. The motivation to deal with problems relevant to the individual is measured with three questions on each problem: (1) "thought of taking action", (2) "ready to take action" and (3) "started to take action" to deal with the problem. They are based on the concept "Readiness to Change" (Miller & Tonigan, 1996). When combined, they form brief motivation scales, one for each problem area.

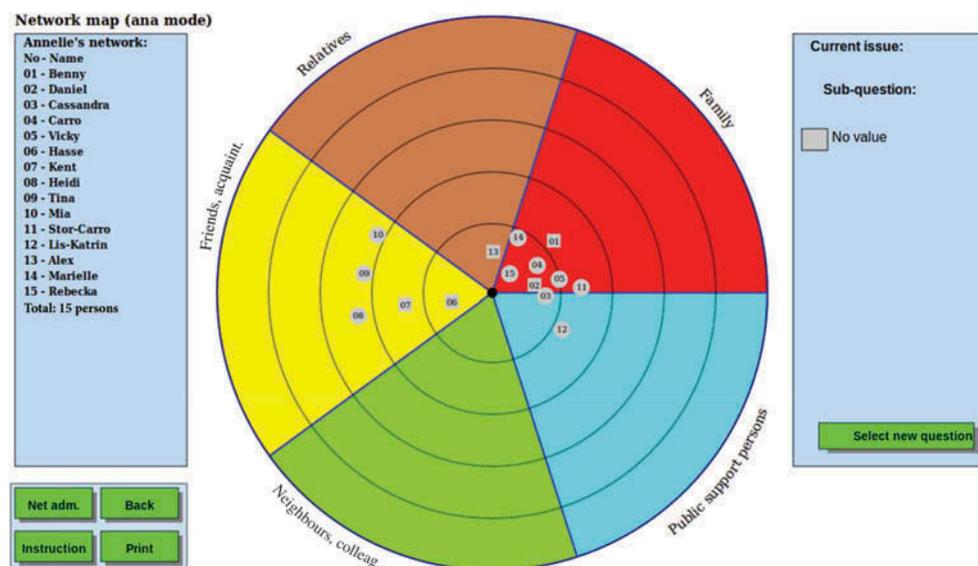
#### 4.2. Section B

The composition of the PSN is mapped in three steps as follows.

In *Module 3*, the names of the chosen NMs are generated and coded in the order they are mentioned by the FP. In MAP-NET, the generation of the NMs is based on the following question: "Who is part of your PSN? Please list the persons who play an important role in your life, including persons who you perceive to play *positive* as well as *negative* roles." To preserve the integrity of the NMs, the FP can choose to use a nickname or a label, e.g. "neighbour". To aid the dialogue between the interviewer and the FP, a set of instructions clarifies who could be included: persons with whom the FP has regular contact and persons who, to varying degrees, satisfy the needs of everyday life or who have significant positive or negative impact on the FP's life. They are primarily persons with whom the FP had personal connections in the past year and persons who previously played important roles and with whom the FP wishes to reconnect (Bø, 1993; Skårner, 2001; Tracy & Abell, 1994). MAP-NET accepts up to 20 persons in the PSN, a limitation necessary for transparent visualisations.

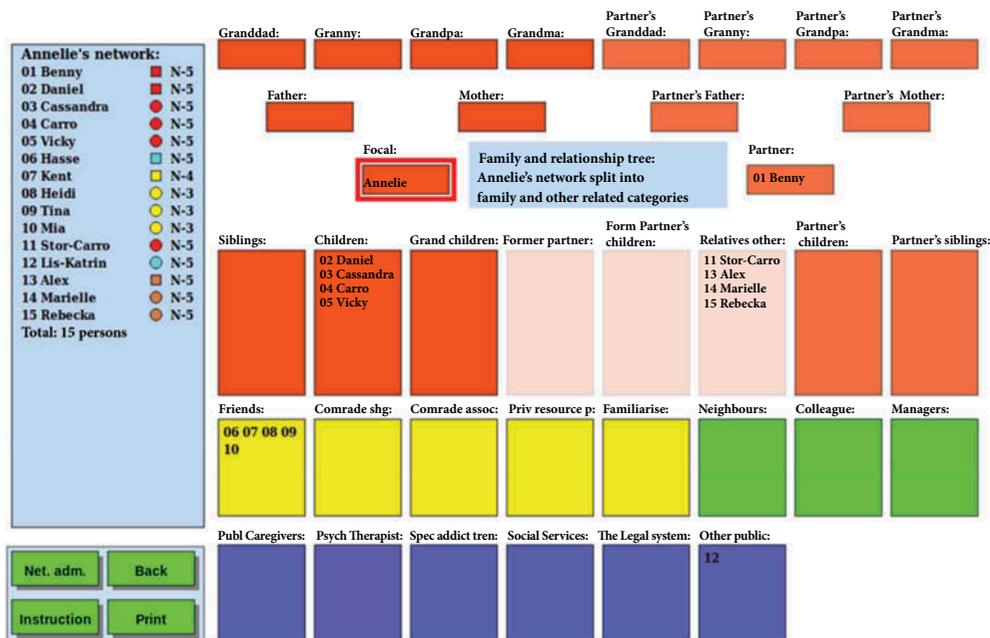
In *Module 4* (Figure 1), the chosen NMs are placed on the network map, which describes the structure of the network by categorising the NMs into the five sectors. The map is also organised in five concentric circles, marking five levels of proximity to the FP ranging from "not at all close" to "extremely close". From the list of persons, the marker for each person is transferred (click and

**Figure 1.** The network map provides a visual output of the size and composition of the PSN including the NMs' level of closeness to the FP. The list of NMs generated in Module 3 is shown on the left. The sub-questions on the right are used later in the assessment.



drop) to the network map. The FP may choose the sector, since the boundaries can be flexible. For example, some people may define “family” as just the immediate family, while others may include family of origin, and a neighbour or a colleague may also be a close friend (Allan, 2008).

**Figure 2. Family and relationship trees for the FP (left) and the partner (right). The list of NMs generated in Module 3 is shown on the left of the picture.**



In *Module 5* (Figure 2), the FP places the chosen NMs in the classic genealogy tree for family and relatives. In addition, special boxes are designed for the other sectors, thereby giving more precise information on the type of relation to the NM.

The family and relations tree makes it possible to specify the relationships as complementary to the sectors on the network map. It also provides a starting point for a dialogue about persons missing or excluded from the PSN, despite being close relatives. The three-step model provides the framework for relevant persons to be added to the network map—in accordance with Bø (1993), who argues that combined strategies should be used (see also Brewer & Webster, 2000). If the FP wishes to include some additional person (or remove someone), it is possible at any time during the interview to return to *Module 3* and register this person, and then return to the network map.

#### 4.3. Section C

When the PSN structure has been identified, the MAP-NET interview proceeds to explore the quality and function of the individual relationships. *Module 6* focuses on interactional aspects. Initially, each relationship is explored through factors such as frequency and form of contact (personal meetings, telephone, social media, etc.), duration of and initiative to contact, and geographical distance. For each relation, the FP also reports whether contact is independent of own substance misuse. The next step is to explore how the FP perceives each relationship in terms of emotional significance and quality (intimacy and intensity). The FP agrees with six statements on the quality of each relationship, with factors such as caring, liking and depth indicating richness, while superficiality, conflict and threats indicate problems in the relationship.

*Module 7* focuses on functional aspects. MAP-NET aims to give a nuanced and concrete description of the support provided (or not) between the FP and the NM, distinguishing between *specific functional aspects*, i.e. the—negative or positive—influence that the FP considers that the NM has on the FP's ability to handle current behavioural problems (outlined in *Module 2*), and *general functional aspects*,

i.e. how the FP perceives the exchange (both directions) of various types of support, and if the NM offers a sense of belonging and links to new and positive social contacts (Beattie & Longabaugh, 1999).

As for specific functions, the NM’s impact on the FP’s problems concerning alcohol, drugs, gambling and criminality is rated on a scale from “strongly positive” to “strongly negative”.

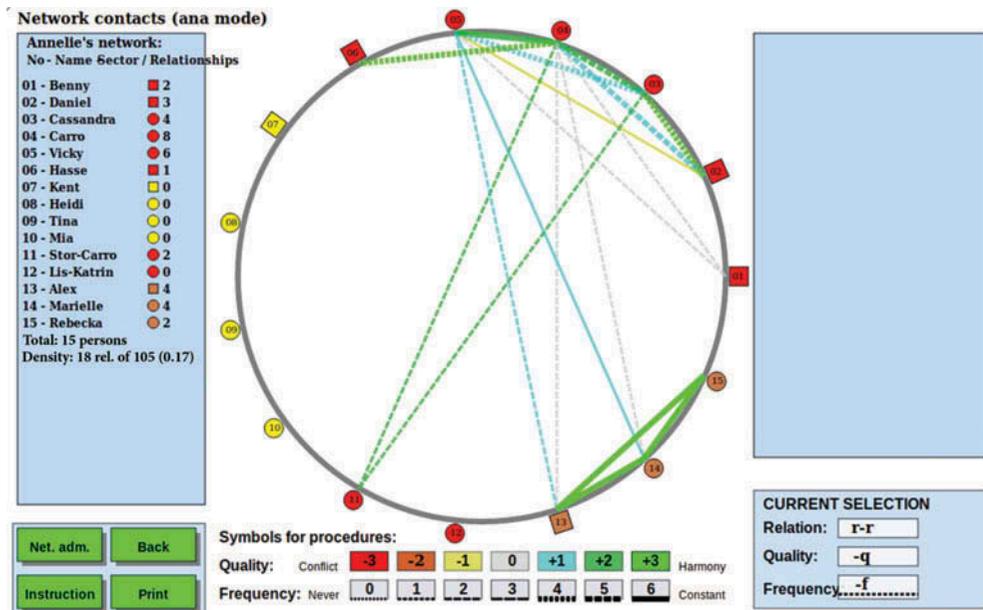
The general functional aspect that MAP-NET contains—in line with Marsella and Snyder’s (1981) conceptual framework—is a set of questions to measure the exchange of four types of social support: emotional, cognitive, practical and financial. A key point is that the mapping includes the FP’s conceptions of the reciprocity of the exchange, i.e. from the FP to the NMs and vice versa. Giving support can also fulfil an important function for the FP and strengthen the social ties (Panebianco, Gallupe, Carrington, & Collozzi, 2016; Skårner, 2001). In the case that the FP feels that neither of the parties is in need of support, this is noted.

Finally, the mapping focuses on social belonging and the network’s potential for growth and restructuring. One question is whether the NM is a person with whom the FP spends time in the sense of belonging and another is whether the NM is a person through whom the FP gains access to a broader, healthy PSN. Four questions, with opposite values at the endpoints, describe the personal emotions between the FP and each NM in terms of conflict vs harmony, fear/threat vs security, lowers vs strengthens self-sense and distrust vs trust. These questions address key factors in the exit process: what are the conditions like for maintaining, expanding or establishing a social identity and a social network outside the substance using a social context with the help of the current PSN?

**4.4. Section D**

The final two modules focus on the NMs and their internal connections, based on the FP’s knowledge. In *Module 8*, specific questions are asked about each NM concerning demographic and social background, providing the possibility to address their resources. After that, the NM’s own (possible) problems with alcohol, drugs, physical and emotional health, gambling and criminality are addressed. The module also contains questions about the NM’s possible active part in the FP’s problems. The purpose of this relatively detailed mapping of the NM is to obtain a complete picture of the problems and resources of the PSN.

**Figure 3.** The contact map provides a visual output of the density of the PSN and of the interrelations between the NMs. The list of NMs is shown on the left.



*Module 9* addresses contacts between the NMs, i.e. to what extent they are familiar with each other and how the FP perceives the emotional quality of their relationship. This is done by means of a contact map (see Figure 3), i.e. a circle on which all NMs are placed. The FP is asked to draw lines between NMs who know each other and then to characterise each relation in terms of frequency of contact and harmony vs conflict. Aggregated data of the density of the network are generated automatically, that is the proportion of established links relative to potential links. In addition, through the pattern of links, clusters of NMs can be identified, as well as any central “nexus” and “isolates”.

The contact map is an important part of the network analysis, providing information about the communication within the PSN. The contact map sheds light on the frequency of contacts and the degree of harmony/conflict within the identified clusters, as well as between clusters, which often leads to interesting reflections from the FP and may impact who is invited to network sessions. Aggregated data for contact frequency and harmony/conflict can be generated for both the total PSN and the identified clusters.

Thus, the contact map provides a foundation for the analysis of variables such as density, level of conflict and intensity of contacts, cluster formations, nexuses and isolates, which, in turn, can be connected to the variables examined in the previous modules. For example, a dense drug-free PSN with a clearly defined nexus function can provide favourable conditions to mobilise support by having well-functioning channels for communication—provided that the emotional quality of the relationships promotes constructive support. Such a network may, however, provide less opportunities for making new social relationships, owing to the fact that the NMs socialise mainly with each other. Thus, a “weak” (Granowetter, 1973) social network and isolate functions can have the potential to provide links to new social groups.

The four sections presented here constitute the assessment tool of MAP-NET, including the three visualising figures. However, MAP-NET will provide other tools at the individual PSN level to be used in counselling for reflection, e.g. output figures on the problem and motivation profile, “misuse network”, support network, support provision and reception flow chart, and NM cluster qualities. At unit level, there are aggregated outputs on patient profiles, network profiles, etc. More detailed information on the instrument is available from the authors on request.

## 5. Discussion

MAP-NET is based on the basic assumption that social relations are central resources, yet sometimes complicating factors, to handle various life problems, including substance misuse. The network perspective focuses on *the whole person* and aspects of identity other than those associated with the substance misuse (Neale, Nettleton, & Pickering, 2011). Recovery is often a prolonged and complicated process in which the role of the PSN may vary during different phases. Social network factors impact on the *motivation* to change and *implement* the change by providing support and a social context within which the problems associated with cessation may be easier to tackle, and on *maintaining* change over time (Skårner, 2001). This does *not* mean, however, that the mere existence of a (even sober/drug-free) network is an axiomatic good in the sense that the support offered is constructive and the context a desirable one.

Relationships vary in, e.g., duration, intensity and emotional bonds. Social support for both everyday and more severe problems and of various types—financial, emotional, cognitive and practical—is transferred through relations. Support may be mutual or one-sided, and types may vary in importance. The emotional climate influences the support process: what is requested, offered and accepted (Vaux, 1988). When this complexity is highlighted, the nuances of the PSN appear (Lincoln, 2000). Relations may give a sense of belonging or access to other new relationships and social arenas (as gate openers). They may provide positive or negative role models of problematic behaviour or to handle problems. Thus, the problems of the FPs and the individual problems of the NMs may—or may not—be related, e.g. misusing

together or mutual support in handling problems together. Sometimes the same NM may have two such roles in relation to the FP.

Strong bonds generate support and a deepened sense of belonging, whereas weak bonds create windows to society (Granowetter, 1973). Both types are needed to facilitate the exit process from substance misuse. The composition of relations (e.g. density) provides the opportunities for these interactions and functions. If a person's main bonds are in the "social world of misuse" (Svensson, 2007), a connective link to "ordinary life" may be a valuable resource for recovery. Correspondingly, emotionally close relationships in the social context of misuse may constitute problematic links to relapse (Dingle et al., 2015; Skårner, 2001).

Taken together, the various modules in MAP-NET provide a basis for a faceted, concrete and nuanced analysis of structural, interactional and functional aspects of social networks and how these interact. Such an analysis makes it possible to identify problem areas and resources both in general and in relation to the specific circumstances attributed to substance misuse and the role of treatment in the recovery process.

The clinical application of MAP-NET is central. The client/patient, in dialogue with the counsellor, will be able to conduct a thorough exploration of the PSN and, through direct visualisations, discover patterns of importance to his/her rehabilitation preconditions, and to reflect on those together with the counsellor. The combined mapping strategies to explore the PSN, and the speediness and concrete expression of feedback that promotes reflections should make this a powerful instrument not only for assessment but also for therapeutic cognitive apprehension and discussion. One observation from the validation study was that many FPs spontaneously expressed that they gained new insights related to their PSN through the MAP-NET interview. Given a better understanding such as this, the FP may prioritise how he/she develops and acts on various personal relations. The health and welfare system can optimise various supportive interventions for mobilising and involving selected NMs in the recovery process, while at the same time providing the FP with the preconditions to handle and distance himself/herself from the negative impact of parts of the PSN.

A flexible, network-orientated approach to treatment—or to use the words of Copello et al. (2002) "thinking network"—includes a broad repertoire of interventions and strategies. The long-term work for change requires an individualised and flexible approach that takes both weaknesses and resources of the PSN into account, as well as how the FP finds himself/herself in the process. The FP may need help to mobilise the existing PSN to release its resources and develop positive social support during and beyond the treatment period. Involving "concerned others" from the family and broader social networks in the rehabilitation process is an important way to facilitate recovery, and there is demonstrated evidence of it (e.g. Galanter, Dermatis, Keller, & Trujillo, 2002; Higgins, Budney, Bickel & Badger, 1994; Orford & Copello, 2002; Rawson et al., 2004, UKATT, 2005). However, substance misuse often creates relational problems and loss of relations. Relationships with partners and close family riddled with conflict and guilt may require efforts in the form of couple/family therapy (e.g. Powers, Vedel, & Emmelkamp, 2008). Family members affected by substance misuse problems may also need professional support in their own right (e.g. Orford, Velleman, Copello, Templeton, & Inbanga, 2010; Zetterlind, Hansson, Åberg-Örbeck, & Berglund, 2001). Other possible network-orientated strategies are designed to strengthen the individual's own social capacity to establish and maintain supportive social relationships or practical support for getting in touch with self-help groups or recreational activities (Dingle et al., 2015). And—not to forget—access to basic resources, e.g. housing and employment, constitutes potential platforms for renewal of the PSN (cf. Kriegel, Hsu, & Wenzel, 2015).

Finally, a PSN is an ongoing project (Suitor, Wellman, & Morgan, 1997). An interactional network perspective suggests that the individual relations, as well as the composition of the PSN, vary over time. Some relationships are utterly strong and resistant, whereas others break or erode. Losses can be compensated for and new social relationships established as a result of both changes to the external life conditions and the person's own change efforts. This capacity of the PSN to change can both inhibit

and promote the road to recovery. Individual change and/or change in the social context involves new challenges, as the need for support and sense of belonging also change. How these changes are related to recovery should be studied longitudinally in its complexity (cf. Tracy & Whittaker, 2015). MAP-NET offers several possibilities for longitudinal studies. Through repeated interviews we can follow how social networks develop over time and how this relates to substance use as well as to recovery with or without treatment.

The instrument is presently available in Swedish and has been translated into English. It has the necessary properties to be translated into and be used in any other language. The authors would like to have contact with researchers who would be interested in cooperating on such a mission.

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The authors declare no competing interests.

#### Author details

Anette Skärner<sup>1</sup>  
E-mail: [Anette.Skarner@socwork.gu.se](mailto:Anette.Skarner@socwork.gu.se)  
Arne Gerdner<sup>2</sup>  
E-mail: [Arne.Gerdner@ju.se](mailto:Arne.Gerdner@ju.se)

<sup>1</sup> Department of Social Work, University of Gothenburg, Gothenburg, Sweden.

<sup>2</sup> Department of Social Work, Jönköping University, School of Health and Welfare, Jönköping, Sweden.

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