# Observation of socio-moral climate in the hospital – A study with hospital physicians<sup>1</sup>

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#### ABSTRACT

The socio-moral climate (SMC) is part of the work climate in an organization. It contains five dimensions, which can promote moral behavior and (mental) health of employees. Based on a previous quantitative self-report questionnaire study on SMC with hospital physicians, the following research questions emerged: Can SMC be observed? How does an observation tool have to look like? Does it correspond with quantitative findings? The developed observation tool was applied in three medical disciplines in a hospital in Austria. Two observers carried out 21 observations at medical meetings and ward rounds. Additionally, eight interviews were conducted. Analyses showed that 45 % of the observed interactions contained SMC-relevant aspects. The observer agreement was satisfying (r = .67-.69) and SMC total values per discipline corresponded with the survey results. This study found that SMC can be observed based on an innovative observation tool developed in this study, which corresponded well with quantitative data.

### **Keywords**

Organizational climate - moral behavior - medical residents - observation methods - qualitative methods

# 1 Introduction

The socio-moral climate (SMC; Pircher Verdorfer, Steinheider & Burkus, 2015) is defined as part of the organizational climate in an organization. It originally targets the description of specific organizational structures and practices, which promote the development of employees' prosocial, democratic and moral competences and actions (Weber, Unterrainer & Höge, 2008). Examples relate to communication, teamwork, collective problem solving, decision-making and leadership behavior. A key aspect of the SMC concept, the development of moral competences, derives from Kohlberg's seminal work on developing moral competences of children and adolescents (Kohlberg, 1984).

Kohlberg and his colleagues highlighted the role of a specific social climate at school and in the classroom – the so called 'moral atmosphere' leading to moral development (Power, Higgins & Kohlberg, 1989). Corsten and Lempert (1997) defined "moral" as "social regulation, coordination and evaluation of

actions" (transl., p. 15) according to norms or moral principles, which are supposed to be right - also indicating good. A "developed" moral judging person on the highest levels knows how to consciously orientate him/herself towards moral principles like freedom, equality and justice. He or she is capable of balancing dilemmas or conflicts through a differentiated view, keeping laws in mind, but not necessarily respecting them always if moral principles stay in contrast. Also in the adulthood - not only in schools - there is still a chance to develop or enhance people's moral competences. For example, in the organizations of daily work life: Lempert (1994) adapted the 'just-community-approach' of Kohlberg regarding schools to the occupational domain. Weber, Unterrainer and Höge (2008) evolved these approaches and definitions of Kohlberg, Lempert and colleagues to the construct of SMC, which has recently been studied in the occupational field of hospital physicians (Höge et al., 2019).

The SMC construct consists of five dimensions (Weber et al., 2008; Pircher Verdorfer, Weber, Unter-

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rainer & Seyr, 2013): (1) Open confrontation of the employees with conflict and constructive conflict resolution, (2) reliable and constant appreciation, care, and support by supervisors and colleagues, (3) open communication and participative cooperation, (4) trust-based assignment and allocation of responsibility corresponding to the respective employees' capabilities, and (5) organizational concern for the individual.

So far, in questionnaire-based studies performed in occupational settings, a higher SMC was significantly related to prosocial, democratic and community related action orientations and work-related wellbeing outcomes. Positive examples are organizational commitment and solidarity at work (Weber, Unterrainer & Schmid, 2009), the experience of meaning at work (Schnell, Höge & Pollet, 2013), as well as work engagement and knowledge sharing behavior (Picher Verdorfer et al., 2013, 2015). Lower SMC in contrast was significantly related with turnover intentions, workplace deviance and organizational cynicism (Pircher Verdorfer, Steinheider & Burkus, 2013, 2015). Those findings indicate that the SMC is related to personality development and mental health of employees and potentially may promote these.

The findings further encourage to investigate the SMC in hospital settings, as special moral challenges (Kälvemark, Höglund, Hansson, Westerholm & Arnetz, 2004), high demands (e.g., Angerer & Weigl, 2015), and health risks (e.g., Shanafelt et al., 2015; Wurm et al., 2016) characterize the daily work situation of most hospital physicians worldwide.

Previous studies across different medical disciplines revealed significant negative relations regarding the five SMC dimensions with all three dimensions of burnout, and significant positive relations with general well-being, the patient safety climate (Strecker, Höge & Höfer, 2018; Kachel, Strecker, Haselgruber, Höge & Höfer, 2020), the applicability of individual character strengths at work (Höge et al, 2019), mental health, physical health, and work engagement (Strecker, 2019). These relations between the SMC and well-being, health or personal development of physicians in cross-sectional and partly in longitudinal data confirmed previous results concerning the importance of SMC regarding those outcomes. They further lead to the assumption that it is well worth to examine the SMC and its dimensions through qualitative studies for a better understanding of the construct and its underlying relations, e.g., via observations and additional interviews in the field.

## 2 Aims

Based on quantitative self-report results on the SMC in hospitals (Strecker et al., 2018; Strecker, 2019), the

following research questions resulted: Can the SMC be observed by external researchers to gain a more objective perspective? How to design a corresponding observation tool? Do the results of the observation replicate quantitative statistical findings?

To answer these questions, a universal SMC observation tool was developed, which should be able to measure the overall SMC in a team, a department or organization as well as the five single sub-dimensions of SMC.

In a pilot study, the observation tool was tested in real settings, to examine its psychometric properties. The results of the observations were compared to quantitative self-report results. Supplemental interviews were conducted to gain a deeper understanding of the SMC construct in the hospital work setting.

### 3 Methods

## 3.1 Development

Firstly, the main theoretical concepts and definitions on which the SMC is based had to be reviewed and clarified based on the relevant literature. This was in particular necessary for the concept of moral development (Power et al., 1989) and the conditions of socialization concerning moral development (Corsten & Lempert, 1997) like dealing with conflicts in groups, open communication and participation opportunities. As those conditions always depict social interactions in terms of communication between members of a team / organization including representatives of different hierarchical levels, we decided to choose observation settings aligned with interaction and communication, where all members were invited or (potentially) involved, like department meetings, daily team conferences etc.

Secondly, we performed a moderated focus group with physicians of six different medical disciplines. The aim was to identify opportunities in daily work routines to observe interactions that can be indicative for the specific SMC in a department. The focus group members agreed on department meetings and medical rounds as practicable settings for the observation.

Thirdly, we examined the contents of both the 21 items of the short version of the SMC-questionnaire (Pircher Verdorfer et al., 2015), and the 84 items of the original SMC full version (Seyr, 2008) to reach an comprehensive understanding of SMC-relevant aspects at work and to acquire the most characteristic concepts and topics of the five SMC-dimensions that cover all their relevant aspects. We further decided to focus on three central topics per SMC dimension (in total 15 topics) for the observation tool, as the capture of all existing topics in the literature would be uneconomic

SMC Dimension	(1) open / constructive confrontation with conflict	(2) reliable and constant appreciation and support	(5) open communication and participative cooperation	(4) trust-based allocation of responsibility	(5) organizational concern for the individual
Topics	a) contradicting interests / diffe- rent approaches	a) culture of errors	a) openess for new contributions and (moral) criticism	a) trust in the capabilities of employees	a) individual aspects / personal needs
	b) addressing conflicts	b) trust (regard- less of role / education, etc.)	b) questioning of principles / rules; criticism	b) appropriate allocation of responsibility	b) apparent perspective acquisition
	c) injustice	c) mutual respect	c) (stimulation of) employee participation	c) standing up for others / patients	c) serious consideration on important issues

Table 1: The five SMC dimensions with three central topics each, appearing in the observation protocol.

and would exceed observer's capabilities (see Table 1). These 15 central topics were broad enough to cover the main characteristics of each dimension, which was validated by a scientific SMC-expert not involved in the study.

Fourthly, to find further concrete behavioral examples for anchoring the observations, a qualitative interview-study about SMC with 16 employees of different industries (research project ODEM: e.g., Wieder, 2015) was analyzed. A detected (negative) behavioral example for the dimension open communication and participative cooperation is: ,XY (supervisor) ignores suggestions from employees.

For the determination of a suitable method and observation protocol, two already existing observation tools with other objectives were consulted and served as first basic templates: A tool designed for work tasks and workflow-interruptions in the hospital (Weigl, Müller, Zupanc & Angerer, 2009) and the "Discussion Coding System" (DCS; Schermuly, Schröder, Nachtwei & Scholl, 2010), which is based on a scientific tradition for the analysis of interaction processes via observation at conferences, meetings respectively communication situations between team members (Bales, 1950; Fisch, 1994). The smallest analytical entity of both instruments are single coded interactions. We accordingly derived communicative interactions (verbal and nonverbal) between two people or a group of people in regular communication settings as basic entities for the SMC observation tool.

# 3.2 Pre-tests and final version of the observation protocol

Pre-versions of the observation protocol were tested in different settings, e.g., university courses and work meetings of different group sizes, resulting in the final version of the observation protocol (see Figure 1). In the final observation protocol procedure, each interaction first had to be shortly characterized regarding the role of the persons involved (e.g., supervisor, medical specialist, medical resident, whole group etc.) and its content (see "A" in Figure 1). Second, the interaction had to be rated independently by two observers regarding a functional meaning on a scale from 1 (destructive) to 5 (constructive) and an interpersonal meaning on a scale from 1 (disrespectful) to 5 (respectful) (see "B" in Figure 1). The rating scales thereby provide the calculation of interrater agreement, ensuring reliability. The differentiation between a functional and an interpersonal meaning of an interaction / a message between two (or more) people also derives from the scientific tradition for the analysis of interaction processes (e.g., DCS, see above). In addition, the interpersonal meaning corresponds with a central dimension of the socio-moral climate ('appreciation and support'). Third, the occurrence of one (or more) of the 15 defined SMC topics (Table 1) in a positive (+1) or negative way (-1) had to be marked (see "C" in Figure 1). Afterwards the decision of relevance regarding the SMC topics was validated discursively by the observers following identified behavioral examples in the development phase. Space for additional notes (e.g., striking nonverbal signs or other special circumstances) was available.

The observed data documented in the observation protocols were analyzed after the observations (regarding sums of SMC-relevant interactions per setting / department, scale means, interrater-agreement, proportions of positive vs. negative SMC topic occurrence in general / per dimension etc.) with an Excelspreadsheet, created for this purpose. For a detailed description of the computational procedures behind this spreadsheet, see Strecker et al. (2019).

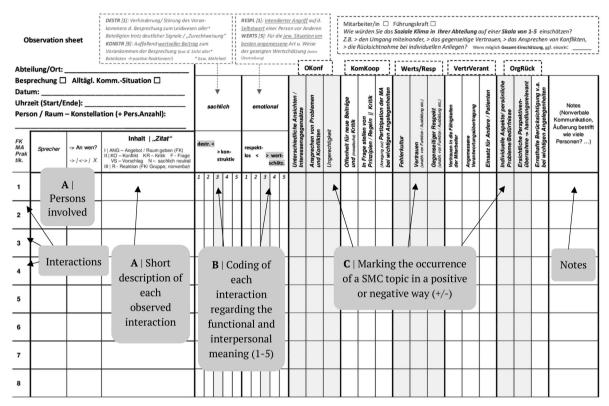


Figure 1: Final observation protocol (example in original German language).

### 3.3 Study design

After performing pre-tests in the hospital, the observation tool was applied in three different medical departments in a university hospital in Austria, representing special, surgical and internal medical disciplines. They are described below as Department (Dep.) 1 - 3. In total four observers (two observers attending each setting) accompanied 21 observations at medical meetings and rounds for five weeks.

Subsequently, eight interviews with medical residents and supervisors of the three medical departments were conducted. Firstly, they were introduced to the concept of SMC and the definitions of the five SMC dimensions. Secondly, the physicians were asked to evaluate each of the five SCM dimensions regarding the importance (i) for their well-being at work and (ii) the proper functioning of the daily work in their department. Furthermore, we took the chance to clarify whether some conspicuous observed behavior (e.g., emotive discussion during a meeting) was typical or exceptional for the medical department.

### 4 Results

The 21 different observation settings revealed 611 observed interactions (Dep. 1: N = 97 / Dep. 2: N = 219 / Dep. 3: N = 295). In total 190 speaking persons were

coded (Table 2). Total observation time was 706 minutes, with durations between 5 and 80 minutes and an average of 34 minutes per setting.

Analyses of the SMC observation showed that 44.5 % of all observed interactions contained SMC-relevant aspects, i.e. at least one of the 15 SMC topics was marked as positively or negatively occurred (e.g., the supervisor respectfully asked for further suggestions or persons reacted by ignoring the speaker). For a global value of SMC in each department, we computed an average time weighted positive vs. negative SMC topic ratio, resulting in 92 vs. 8 % and the first rank for Dep. 3, 88 vs. 12 % and the second rank for Dep. 1, and an apparently different ratio of 55 vs. 45 % and the third rank for Dep. 2 (Table 2).

First psychometric property tests showed, that the observer agreement (reliability) concerning the ratings of the two scales "distructive vs. constructive" and "disrespectful" vs. "respectful" (see "B" in Figure 1) was satisfying with an perfect agreement in 67 % of the ratings, 31 % deviated maximally by one point affirming the trend, and 2 % deviated 1.5 points and higher. We further analyzed the intra-class correlation coefficient (ICC). This coefficient is a standard measure for the calculation of agreement between fixed observers that produce ratings on a continuous scale. It is also a more stringent indicator of reliability as it is based on classical test theoretical assumptions considering an error variance and a comparison with random ratings.

	Observed interactions / settings total	SMC relevant aspects (means)	Pos. / neg. SMC ratio of topics*	Pos. / neg. SMC ratio of interactions*	rank**	SMC (mean) (scale: 1-5)	rank**
method			observation			online survey	
Dep. 1	97 / 6	42 %	88 % pos. / 12 % neg.	83 % pos. / 18 % neg.	2.	2.48 (SD = 0.7) N = 49	2.
Dep. 2	219 / 6	47 %	55 % pos. / 45 % neg.	53 % pos. / 50 % neg.	3.	2.44 (SD = 0.6) N = 18	3.
Dep. 3	295 / 9	43 %	92 % pos. / 8 % neg.	86 % pos. / 13 % neg.	1.	2.60 (SD = 0.9) N = 34	1.
TOTAL	611 / 21	45 %	79 % pos. / 21 % neg.	74 % pos. / 27 % neg.		2.51 (SD = 0.7) N = 101	

Table 2: Results of the observation for each department and in total, compared with online survey results.

Notes: \*Basis: only SMC relevant interactions; \*\* regarding the extent of being characteristic for a SMC (1. = greatest extent).

Dep.: Department, pos.: positive, neg.: negative

We performed the two-way mixed model ICC in SPSS (single ratings by 2 observers) with the requirement of absolute agreement. Coefficients can range from 0 to 1, values > .7 are considered as good (Wirtz & Caspar, 2002). Our results revealed a satisfying observer agreement (r = .67-.69).

For validity estimation, we took the quantitative self-report results – measured by the 21-item short version of the SMC-questionnaire (Pircher Verdorfer et al., 2015) on a 5-point scale – into account, which had resulted in the same ranking order for the three medical departments (SMC = 2.6 for Dep. 3, SMC = 2.5 for Dep. 1 and SMC = 2.4 for Dep. 2) and therefore corresponded with the qualitative results of the observation. However, between the means of the quantitative self-report questionnaire data of the three departments resulted no statistically significant difference (ANOVA: p = .70).

The results of the SMC-observations are based on department ratings reflecting the SMC on the department-level. In contrast the self-report questionnaire results on SMC are based on single person ratings reflecting perceptions on the individual level. Therefore, it is not possible to simply correlate the results of the SMC-observations and the questionnaire-study for validity estimation. This would only be possible on the department level by correlating the observation-SMCdepartment scores with self-report questionnaire-SMC-department scores aggregated from the individual ratings of participants from the same department (e.g., arithmetic means). However, for computing such a correlation on the department level a sufficient number of departments is necessary. Because only N = 3departments participated in our study it made no sense to compute such a correlation.

Regarding the adequacy of observation settings for the SMC contents, the results revealed that most

observations in all departments were made for the dimensions constant appreciation and support and open communication and participative cooperation; fewest observations resulted for the dimension organizational concern for the individual.

The interviews led to an accumulation of ideas, thoughts and elaborated examples from the specific department by the interviewees, going beyond the two provided questions. Thus, we additionally analyzed all interviews unlimited of the two posed questions by qualitative content analysis (Mayring, 2010) to gain a broader picture of the SMC in a hospital setting. These analyses resulted in eight categories, such as antecedents of the SMC, effects on the employees` (mental) health, effects on daily work routines caused by (not) experienced SMC, coherences between the dimensions, general causes for conflicts etc. (please see also Kachel et al., 2020). Two categories directly refer to the two posed questions about the effect of SMC on mental health and the daily work routines. The results revealed that all dimensions tend to be stated important for well-being and mental health, but not necessarily for daily work routines in the short run (although in the long run).

Examples for *antecedents of the SMC* were the hierarchical structure of the organization (the stronger the hierarchy, the less the probability of an emergence of high levels in the SMC dimensions), the respective leadership style (e.g., fostering or hindering for example the discussion of conflicts), but also individual preferences, abilities and needs of employees within the organization (e.g., for receiving appreciation, taking responsibility etc.).

Regarding the *effects on the employees*` (mental) health, the interviewees concordantly affirmed that highly developed SMC dimensions contribute to

higher well-being and motivation (e.g., through trustbased assignment of responsibility and constant appreciation) and to less uncertainty, rumors or misunderstandings (e.g., through open communication and participative cooperation).

Effects on daily work routines caused by (not) experienced SMC were valued as less significant, compared to the last category on (mental) health. However, in a long-term all SMC dimensions were considered as important for the *quality* of the daily work routines. In particular the mentioned effects in the interviews on patient well-being and safety (e.g., through an open communication and the discussion of conflicts) should be taken into account. For more examples regarding the first three categories please see also Kachel et al. (2020).

Furthermore, the interviewees stated coherences between the dimensions, especially an overlap between constant appreciation and support and the other dimensions, e.g., at most with a trust-based assignment of responsibility and at least with the open confrontation of conflicts.

The examples for the category named *general* causes for conflicts mainly refer to the work environment of the hospital (e.g., authoritarian behavior, competitive mindset, higher demand of prompt decisions, repression or in contrast conscious perpetuation of conflicts, throwing medical residents into responsibility at the deep end).

The other part of the interviews was the clarification of observed conspicuous behavior in the observation settings. It mainly revealed that conspicuous interactions or behavior were typically for the department and / or confirmed to be relevant in terms of SMC. In this context, we also received assurances that the observation did not (or at least imperceptibly) influence the ongoing interactions. One characteristic limitation of observation studies therefore does not seem to apply here.

### 5 Discussion

With respect to the aims of this study we can conclude that it is possible to observe the SMC within an organization through the newly developed SMC observation tool. However, the sub-dimension of *organizational concern for the individual* occurred scarcest and the *assignment of responsibility* was hardly represented in two departments (Dep. 1 / Dep. 3), which may lead to the question of reduced observability regarding these dimensions. It is still not surprising as those interactions mostly not occur in group meetings but in single dialogues with the supervisor. The latter are settings we did not observe as they are probably too individual for representing an organizational climate.

Using communication interactions as basis for analysis and evaluation of SMC proved to be useful and possible. The interrater agreement of the data (indicating reliability) was satisfying and the correspondence with the quantitative self-report data was given (indicating validity). Nevertheless, first the results for the three departments in quantitative self-report data varied less than in the observational data. Main reasons could be the difference of the survey periods (up to one and a half years apart) and the point that those people having been observed were not mandatory participants of the questionnaire study before. However, an overlap is liable as physicians of the same department have been examined in both methods. Second, there is no statistical significance between the differences of the SMC means of the three departments and there is no possibility to test the significance of the differences in the qualitative observation results. Therefore, we cannot be completely sure that the differences are not at random. However, after observing the settings, by all appearances it was clear and proofed by a number of concrete observed interactions that the SMC characteristics in each department tend to differ in the ways the online survey revealed before by tendency. The differences between the departments were even larger in the observational data. Furthermore, this ambiguity supports the additional value of observations precisely when quantitative data do not show significant differences.

In sum, the first tests of validity and reliability of the SMC observation tool are promising but must be further assessed in future studies.

We developed an analysis tool, which provides global and sub-dimensional values for each observation setting, department and organization for comparison with other quantitative or qualitative results. It also allows differentiating between hierarchical levels and it should also be suitable for teams or organizations outside the hospital. In any case, observers should take care to select adequate observation settings in advance, which are typical for the examined group and where SMC dimensions could happen realistically. In addition, a good preparation and contacting in advance is essential to avoid irritation during observations, which may bias the results. Moreover, a comprehensive manual for the SMC observation tool including the data analysis procedure for professional users is available in German language (Strecker et al., 2019).

Common limitations of qualitative studies should be kept in mind: E.g., observation bias or insufficient consultation by / between the observers and other human effects, which we tried to avoid via intensive preparation and briefing. The huge effort of observations including preparation and follow up analyses also limits a researcher to observe the whole reality and may often prevent her/him from doing observational studies. Although only the observation does not trouble test persons to take action and provides important insights into the field of interest to really understand the issues quantitatively measured.

As stated above in the section of the interview results, we assume that the possible bias on the observed behavior – caused by the presence of the observers in the settings – is rather small in this study. A reason for the apparent fast adaptation to the observers by the observed employees could be the big size of the hospital, combined with an already existing habituation on a constant changing personnel situation (e.g., due to periodic rotations in the medical training curriculum, different ongoing scientific studies etc.).

We gathered this valuable information through the supplemental interviews in each department that helped to remove some remained ambiguity after the pilot observation study. Moreover, these interviews provided us with deeper insights into the SMC in a hospital setting in order to achieve a more comprehensive and practical relevant understanding of the characteristics of SMC in the hospital. Specifically, the interviews did not only confirm the impressions and results of the observed SCM in each department, but also the underlying concepts of the SMC as well as the knowledge of the present literature regarding antecedents and consequences of SMC on different outcomes.

Consequently, it is recommended to complement a quantitative SMC study with qualitative methods (observation / interviews) to get a broader picture from different data sources and gain a more concrete and lively knowledge about the SMC within the analyzed organization. Particularly with regard to identifying concrete starting points for interventions, qualitative data will always provide helpful information. In the current phase of recently having developed the SMC observation tool and the need of further validations (in different settings), it is recommended to conduct supplemental interviews. In this context, the interviews are an important part of the validation.

Finally, it is important for us to mention an ethical issue regarding the use of the SMC observation tool in practice. The focus of applications of the SMC observation tool should always be the maintenance and the promotion of the SMC in a department or organization serving the interests and well-being of all employees. It is of particular importance for the persons responsible not to act contradictory to the contents and the moral background of the SMC itself e.g., by withholding information about the study or giving the impression of controlling moral behavior of individual employees by observing them. In order to avoid this (perhaps unintentional) unethical behavior by supervisors or experts during an observation study, it is consequently important to secure a timely flow of in-

formation towards all persons concerned and clearly focus on the general climate instead of individual behavior. A meeting, where results are presented to all employees and questions as well as further implications can be discussed, is supposed to conclude every observation study. These aims should be transparent at all times. Furthermore, the SMC observation tool is explicitly available for trained psychological experts. Among other things, they are advised to not report individual observations but exclusively the results of the SMC analysis in general.

### 6 Conclusion

With the SMC observation tool, all five sub-dimensions of the socio-moral climate can lately be measured by observation of interactions in meetings, conferences and related communication situations in a medical hospital.

Two main benefits arise: First, the scientific enhancement and objective complementation of quantitative studies only being based on self-reports. Second, the SMC observation tool as a potential helpful instrument for organizational diagnoses to identify starting points for interventions i. a. regarding personal / moral development and (organizational) well-being of employees.

If an organization is near and dear to the mental health of its employees, to a climate of appreciation and support as well as to moral acting, a socio-moral climate is a promising approach to strive for. Adequate measurements are available.

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