

The *KFzA* and *Badura* are Two Methods to Analyse Workers Health and Motivation as well as the Level of BGM in a Company

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ABSTRACT

The world of work is changing. Not only because younger generations, who are now strongly entering the labor market, have different views and expectations than older generations. Factors such as the COVID-19 pandemic and the general change to Work 4.0 are also influencing the workplace and the work of the future. Various aspects will become extremely important for work in the future. Also, for the employers who are courting a smaller generation. The factor of medicine and employee health is an elementary aspect of this development. Here the so-called operational health management can help. In order to implement this OHM in companies successfully there are in Germany already for longer time different methodologies and questionnaires. This work translates the German methods *Kurzfragebogen zur Arbeitsanalyse* and *Badura* into English and makes them thus internationally available. The main part of the work is an instruction how to use both methods correctly as well as tables and figures for the visualization.

Keywords: *Badura*; Betriebliches Gesundheitsmanagement; Kurzfragebogen zur Arbeitsanalyse; Methodology; Occupational Health Management.

INTRODUCTION

Betriebliches Gesundheitsmanagement (short BGM, Occupational Health Management) is the design, steering and development of company structures and processes to make work, organization and behavior at the workplace conducive to health. An important aspect of this work is the practical implementation of findings from public health research.¹

Betriebliches Gesundheitsmanagement: Through occupational health management (OHM), a strategic approach can be found for the health of employees in the company and this can be implemented consistently and sustainably.²

The world of work is currently undergoing a considerable process of change. Working in a digitalized world (Work 4.0), globalization, flexible working time models, mobile work culture, home office, temporary work and mini-jobs are just a few keywords that describes the current situation in the world of work.³

Workplace health promotion, workplace integration management, occupational health and safety, personnel care, and the areas of personnel and organizational development are the main components of occupational health management.

Occupational health management therefore includes operational processes and structures that aim to shape the organization and work in a way that promotes health, as well as the ability to behave in a way that promotes health.⁴ This supports the long-term and sustainable performance and health of employees. This includes not only physical stress, but also possible mental stress, which can severely impair a person's performance.²

Background: Worldwide, about 4% of the gross national product is lost due to workplace influences that are detrimental to health.⁵ However, young employees are also paying more attention to health measures in companies and are often more critical than their parents or grandparents. For these reasons, the topic of OHM for companies is being dealt with more and more intensively and is becoming increasingly important. In this context, OHM as such is not a new development. The following section is based on Ternés et al. and goes into the history of OHM:

One of the first origins of the current OHM can be found in very pragmatic approaches, which were mainly concerned with the unfitness of young people for military service. In 1828, Prussian King Wilhelm III (1770 – 1840) received a complaint from Lieutenant General Heinrich Wilhelm von Horn (1762 – 1829) that children were working under conditions that were hazardous to their health and often for more than 13 hours a day. But it was not until 1839 that social policy began with the "Prussian Regulative", raising the minimum age to nine and limiting a maximum daily working time for those under 16 to ten hours. Child labor was generally prohibited at night and on Sundays. For the first time, the pilot project imposed a requirement for rudimentary school knowledge, which was monitored by the police and school authorities and later served as a model for similar regulations in Bavaria and Baden. The primacy of occupational health policy since the end of the 19th century has been the prevention of accidents as well as the prevention of occupational diseases. It was not until the political movement of democratization of working life in the 1960s and 1970s that new impulses were given with the guiding principles of humanization of work and humane work design, which were reflected in the Federal Republic of Germany, among other things, in the Betriebsverfassungsgesetz (BetrVG) in 1972 and the Arbeitssicherheitsgesetz (ASiG) in 1973.⁶

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In this way, work was to be made not only harmless for the individual by improving and reducing the stress of working conditions, but also conducive to personal development.⁷ This was followed by the phases of automation and rationalization as well as lean management. During this phase, quality management gained considerable importance.⁷ "Increased quality demands and limited personnel coverage led to the attendance or absenteeism rate of employees becoming a significant factor in the center of consideration". As a result, attempts were made for the first time to develop concepts to reduce absenteeism. These concepts were further developed, as they were only applicable to a limited extent in their initial form.⁷ This has led to the development of occupational health management, which aims to optimize employee health by means of suitable measures. In addition, it can be proven that holistic concepts for workplace health promotion show sustainable or long-term success and reduce absenteeism.⁷ Wienemann points out that the concept of integrated occupational health management (iOHM) is becoming more and more established.⁷

The German sociologist Bernhard Badura is considered one of the core actors in the development of modern occupational health management. The German *betrieblicher Arbeitsschutz* primarily served as the basis for his *BGM*.^{1,8} However, as early as 1986, the Ottawa Charter formulated the goal of bringing the population to a self-determined approach to health-promoting design of the living environment and health services.^{9,10} This formulation is considered one of the basic ideas of modern OHM.

The results of a holistic concept can be presented more clearly by specifying key figures. In the meantime, a distinction is already being made in occupational health management between hard and soft indicators. These indicators can be used to determine the need for action in occupational health management measures, to evaluate the impact of projects and measures, and to control and monitor the effectiveness of these measures.

Hard (objective) indicators show operational facts, such as absenteeism, fluctuation rates and participation rates.¹¹ These can be represented by monetary units and are mainly measurable by the company itself.¹² Soft (subjective) indicators show psychological facts and health resources, such as employee satisfaction and psychological risk assessment.¹¹ These cannot be represented in monetary terms, but are captured by qualitative parameters. These include subjective assessments by employees of their own health situation and the evaluation of operational factors.¹²

BGM and its role for future workers: Occupational health management has developed considerably in recent years and many new areas have become established. The basic idea of occupational health management describes the physical well-being of employees so that the performance spectrum of the workforce can be fully utilized.

The works council, as the body representing employees, has been calling for greater recognition of the health consequences of a changing working world since the late 1990s in relation to demographic change in companies.

Increasing change from manual to intellectual activity, globalization of the national economy, permanent reorganization and mergers, introduction of information and communication technologies, the 24-hour economy, new production concepts, the rapid expansion of the service sector Flexibilization of work, taking work home and increasing workloads are exemplary major causes of increasing work intensification and work stress.² The daily work routine has visibly changed and poses new challenges to the employee, for example by

attempting to transfer the responsibility for recording and adhering to working hours to the employee. These forms of management systems lead to employee overload and have a negative effect on health promotion. The separation between work and leisure time is becoming more and more complicated, as it is possible to check company e-mails on private smartphones and supervisors sometimes use employees' private numbers for professional purpose. At a conference of the ISF (Institut für sozialwissenschaftliche Forschung) the situation was described as follows: *People surf at the limit of endurance and burn out on the demands on the quality of their own work.*²

From these insights gained into which changes in the working world are increasingly burdening employees, measures to improve the situation are inevitable and imperative. Companies can make a central contribution to health promotion through the targeted design of a healthy working environment.

Soft criteria, such as a good work-life balance or company health management, are becoming increasingly important. This is also due to the younger generations who are now increasingly entering the labor market. Generation Z, as those born between 1997 and 2012 are called, have different demands on the labor market and on their jobs than previous generations.¹³ Time now plays a more important role than money. Furthermore, young workers no longer have the loyalty that older workers have.¹⁴ Not to mention their numbers. In some cases, this creates a fierce generational conflict.¹⁵ However, factors such as the current Corona pandemic are also having a huge impact on the labor market.^{16,17} All these factors ensure that things like OHM measures are becoming increasingly important. But this can still be expanded. A 2013 study by the Continentale Versicherungsgruppe surveyed 609 workers. 55% of these surveyed employees stated that occupational health management is still expandable in most companies.¹⁸ Flexible working hours can already be used by 59% of the employees surveyed. Likewise, healthy workplace design and nutrition are frequently promoted. Other measures include medical offerings, sports activities outside working hours, or substance abuse cessation. Large companies offer a more extensive selection than small and medium-sized companies, white-collar workers can take advantage of more measures than blue-collar workers, and western Germany¹ has a larger offering than the eastern German states^{2,18} But according to the study, many workers also want a wider range of measures. However, workers generally want more than they actually perceive and use in practice. On average, 50% of employees actually take advantage of the measures offered.¹⁸

At least 69% of the respondents thought that the measures were useful; for some criteria, the figure was as high as 90%. The three most important and most frequently mentioned offers are healthy workplace design, variable working hours and the possibility for a healthy diet. However, it is also apparent that although OHM is considered meaningful and more measures are desired, it only has an influence on the choice of employer for a few respondents. Only one in five considers this aspect when choosing their employer.¹⁸

The work-life balance is very different depending on the profession and can vary greatly. If, for example, you work as a mechatronics

¹States of West Germany, formerly the *Bundesrepublik Deutschland* (BRD): Baden-Württemberg, Bavaria, Bremen, Hamburg, Hesse, Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, Saarland, Schleswig-Holstein, West-Berlin. Also referred to as the old federal states.

²States of East Germany, formerly the *Deutsche Demokratische Republik* (DDR): Brandenburg, East-Berlin, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt, Thuringia. Also referred to as new federal states.

engineer in a car repair shop, you have the end of the day after your working hours and can spend the evening with family or friends on a private level. However, if you work as a consultant, auditor, banker or manager nowadays, the trend shows that constant availability is generally a prerequisite.¹⁹ This is also due, among other things, to the digitalization that is taking place, which can lead to an intensification of work and overwork.^{20,21}

Kurzfragebogen zur Arbeitsanalyse (KFZA)

Introduction: The Kurzfragebogen zur Arbeitsanalyse, KFZA for short, is an occupational psychology questionnaire developed in 1995 by Jochen Prümper, Klaus Hartmannsgruber and Michael Frese as an instrument for determining psychological stress in the work situation. It is a theoretically based, standardized, quantitative method of relationship prevention that has already been in use for many years in Germany in operational practice. As a questionnaire, the KFZA is a subjective survey instrument. As such, it provides information about the experience of the work situation from the perspective of the employees.²²

Field of application and purpose: The KFZA is a screening procedure that can be used to record positive and negative influences of work and organizational structures with regard to the presence of mental stress. It has been developed for use by industrial and organizational psychologists or similarly trained persons and should therefore only be carried out in the operational context by person with appropriate specialist knowledge. The results obtained can be presented to decision-makers in a practical form so that they can immediately derive concrete design measures to improve the work situation. Mental stress is understood as the totality of detectable influences that come from outside and have a psychological effect on people.²³

Application

1. The KFZA can be downloaded as a PDF from the supplement
2. The KFZA consists of 26 questions divided into 4 aspects
3. Each question can be evaluated on a scale from 1 to 5. 1 stands for AGREE NOT AT ALL, 5 for FULLY AGREE. In addition to the scale, each question is answered with IS and SHALL. In other words, how the condition is in reality and how it should ideally be.
4. The employees fill out the questionnaire anonymously
5. During the evaluation, the IS values can be compared with the SHALL values. An excel file is suitable for this purpose
6. A net diagram is suitable for visualization. This can be created using the diagram function after the files have been successfully

transferred to Excel

Badura Evaluation (Badura)

Introduction: The Badura evaluation is an important tool for company owners and managers to find out how developed the company health structures are or where there is still a need. The checklist was developed by the German sociologist Bernhard Badura.

Field of application and purpose: The checklist can be used both at the beginning of the development of measures and at the end of measures and consultations. It enables the evaluation and general classification of the OHM measures that already exist and are implemented in the company or can show that OHM measures are necessary. The checklist consists of 34 criteria. If the company has implemented or is about to implement a criterion, a YES can be indicated. If a criterion has not been implemented or implementation is still in the planning stage, a NO is indicated. Criteria that cannot be implemented, for example due to personnel or financial reasons, can be entered as IRRELEVANT. In this way, the different criteria are now worked through. At the end, the specified YES criteria are counted and the evaluation result is calculated in %. The following simple formula is used for this:

$$\frac{n_{YES-Criteria}}{n_{YES-Criteria} + n_{NO-Criteria}} * 100$$

Based on the percentage now determined, the state of the OHM can be determined. Table 2 provides an overview of percentage results and the corresponding explanation.

Application

1. The Badura evaluation can be downloaded as an excel file from the supplement
2. The excel file will do the final evaluation. It is enough to answer the criteria.
3. The checklist consists of 34 criteria
4. If a criterion is already implemented by the company or is about to be implemented, a YES is indicated. If a criterion is not implemented by the company or the implementation is still in the planning stage, a NO is indicated. If a criterion cannot be implemented by the company, an IRRELEVANT is indicated.
5. The excel file adds up the YES and NO statements and gives a percentage evaluation
6. Table 2 gives an overview of the different percentages. This should be used for the final evaluation.

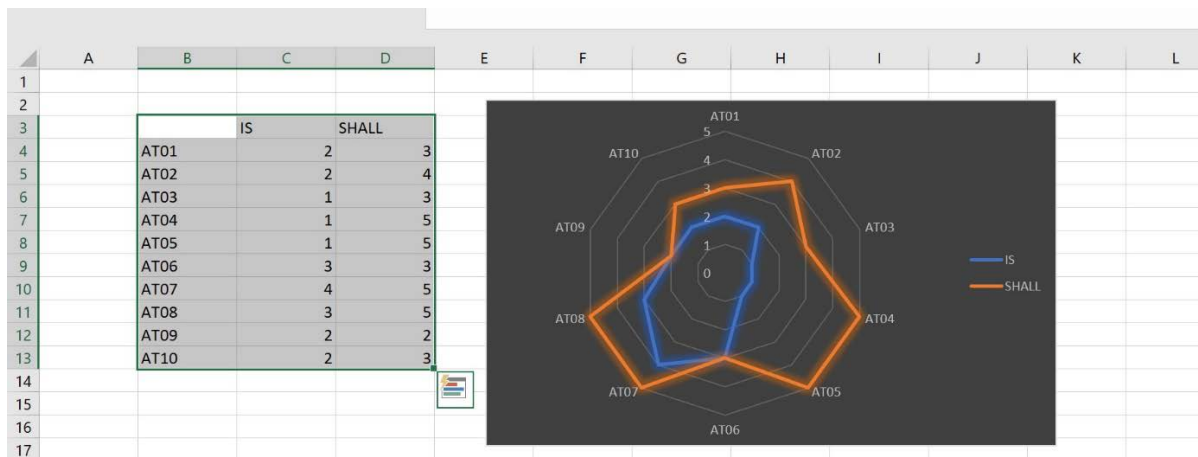


Figure 1. Excel is well suited to document and evaluate the results of the KFZA. The figure shows a screenshot from Excel that exemplifies this evaluation. A net diagram, which can be easily created using Excel, is well suited for visualizing the results.

Table 1. The KFzA consists of a total of 26 questions. These are divided into different aspects. The aspects and the associated items are listed here. The KFzA in the supplement is divided according to the four aspects. Working Activity: AT01 – AT05; Stressors: AT06 – AT13; Resources: AT14 – AT22; Organizational Climate: AT23 – AT26. The items correspond to the questions.

Aspect of the work situation	KFzA scale	Items
Working Activity	Versatility	Learn new Things Use of Knowledge and Skills Change of Tasks
	Holistic	Evaluation of the Work on the Final Result Completeness of the Work Product
Stressors	Qualitative Workload	Complicated Nature of the Work Requirement for the Ability to Concentrate
	Quantitative Workload	Time Pressure Quantity of Work
	Work Interruptions	Availability of Required Information Interruptions at Work
	Environmental Load	Unfavorable Ambient Conditions Insufficient Room Equipment
Resources	Scope for Action	Self-Determination of the Work Steps Influence on Allocation of Work The Possibility of Independent Work Planning and Scheduling
	Social Back-Up	Rely on Colleagues Rely on Superiors Cohesion in the Department
	Cooperation	Requirement for Close Cooperation Possibility of Exchange with Colleagues Feedback from Superiors
	Information and Participation	Information about Important Operations Considerations of Employees' Ideas
Organizational Climate	Operational Services	Further Training Opportunities Career Opportunities

Table 2. The Badura questionnaire determines the level of OHM in a company and gives a score in percent at the end. Based on this percentage, it can be determined how high the level of OHM is and what still needs to be implemented. This table lists the different percentages. The Excel file in the supplement calculates the percentage automatically. With this table the result can be interpreted successfully.

$\geq 76\%$	Green	The overall design of the OHM appears to be in good condition and shows clear positive trends. The structures and processes of the OHM appear to be clearly and long-term integrated into the daily operations. The responsible managers, together with other company experts (internal or external consultants), should look more closely at the criteria related NO. Depending on the number and scope of the criteria in question, a priority and time schedule for implementation should be drawn up.
51 – 75%	Yellow	Overall, OHM in the company appears to be functioning and shows positive trends. The structures and processes appear to be largely integrated into everyday operations. Together with other company experts (internal and external consultants), the responsible managers should devote more attention to the criteria related NO. Depending on the number and scope of the criteria in question, a priority plan and timetable for implementation should be drawn up.
26 – 50%	Orange	OHM in the company is characterized by individual activities that may well contain positive trends. However, the structures and processes are not bundled and are only conditionally made into a medium- or long-term company routine. The responsible managers should first work with other company experts (internal or external consultants) to strengthen or create structural and procedural conditions for comprehensive OHM. Depending on the number and scope of the criteria in question, a priority and time schedule for implementation should be drawn up.
$\leq 25\%$	Red	Overall, OHM in the company only has individual measures. Dedicated structures and processes for OHM have not been established. A “learning” approach is not practiced. The responsible persons should first develop a priority and time schedule for the creation of suitable structures and processes in OHM together with other company experts (internal and external consultants). When planning projects and measures, external consultants such as health insurance funds or employers' liability insurance associations can provide support.

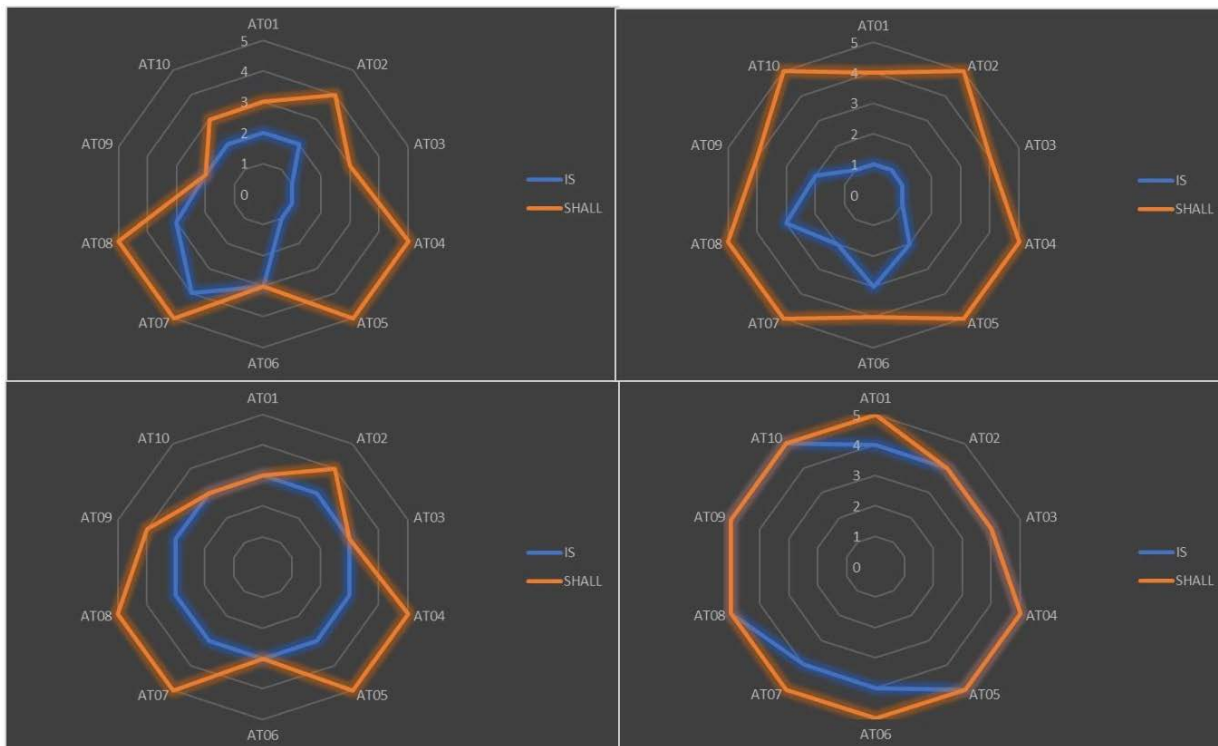


Figure 2. The figure shows various net diagrams of different KFzA evaluations. The difference between the IS and SHALL values shows how much work still has to be invested in the individual points. The net diagram in the lower right shows many overlaps of the IS and SHALL values. Here the values already look good. The net diagram in the upper right again shows many and large differences. Here much work must still be invested.

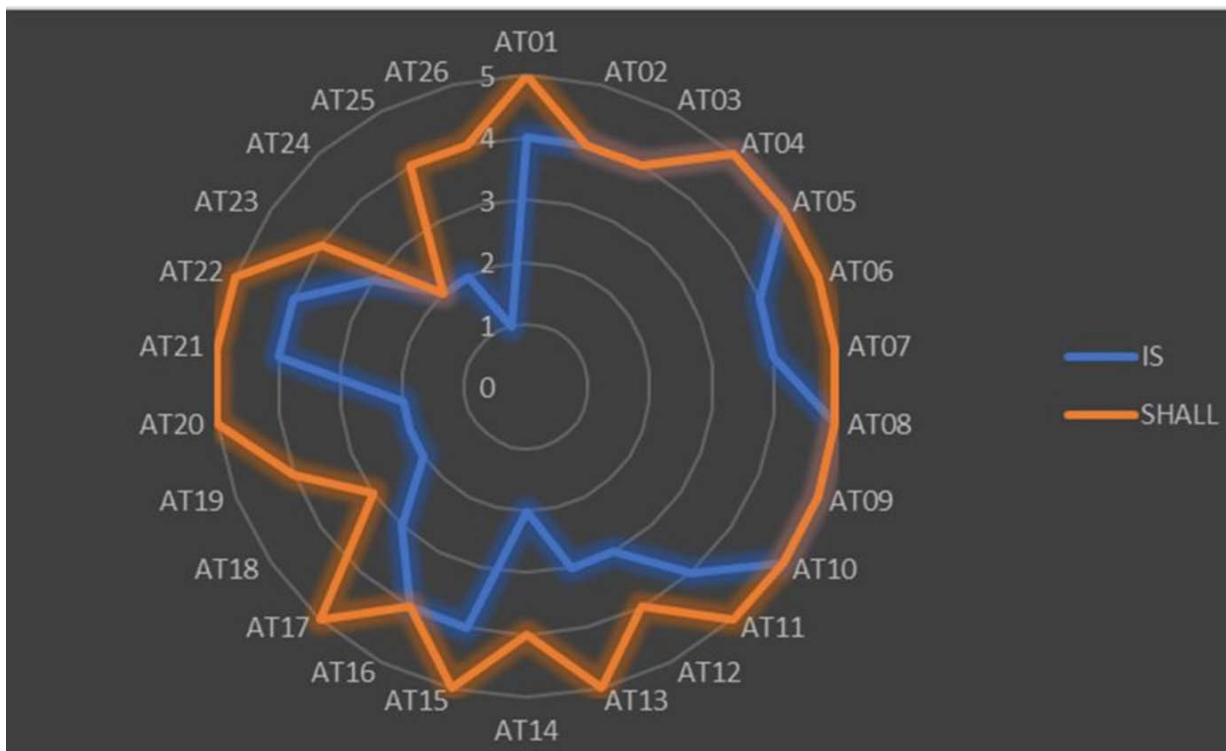


Figure 3. The KFzA consists of 26 questions in total. These questions can all be listed in a net diagram, as shown in the diagram here. However, it should be considered whether this makes sense. Due to the number of questions, the overview can be lost quickly. It makes more sense, for example, to divide the net diagrams according to the aspects as listed in Table 1.

Authorship Contribution:

YB: Analysis, Conceptualization, Translation, Writing (Original Draft Preparation), Writing (Review and Editing), Visualisation

MH: Analysis, Conceptualization, Writing (Original Draft Preparation), Visualisation

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Potential Conflict of Interest: Sven Emmrich is founder, CEO and coach of the Businesshelden GmbH in Berlin, Germany. Businesshelden GmbH and the Karriereheldentm brand see themselves as specialists in online application and career coaching for academics, specialists and managers. There is no financial interest in this article.

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Yannick Borkens and Mike Hoffmann have no Potential Conflict of Interests

Competing Interest: None

Acceptance Date: 12-01-2024

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