SPECIAL ISSUE

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Work and mental health

■ **Abstract** *Background* Studies investigating the psychological correlates of types of occupation have focused on such disorders as stress, depression, suicide and substance abuse. There have also been some models proposed to allow understanding of factors common to different types of occupations. We sought to provide an overview of research related to work and mental health and consider future research directions. *Methods* A literature search was conducted using the Medline, PsycInfo, Embase and PubMed databases. The key words 'occupation' or 'work' were searched in combination with the key words 'mental health', 'risk factors', 'disorders', 'depression', 'suicide', 'trauma', 'stress' or 'substance use'. *Results* Studies of 'stress' tend to be more applicable to specific workplace issues. While some of the studies relating to onset of depression, suicide, substance abuse and trauma pertain to specific occupational issues and results are often not generalizable, they have progressed our understanding of risk factors to those disorders. There are workplace factors involving exposure to danger and crisis that lead to posttraumatic stress disorder (PTSD), substance abuse (including stimulants) and depersonalization. Workplace risk factors for depression involve situations promoting lack of autonomy, and involving 'caring' for others as part of the work role, particularly where there is dependence on others for their livelihood. Risk factors for alcohol abuse include workplaces with access to alcohol and where use of alcohol is sanctioned. There appears to be a bi-directional relationship between personality and work, so that people are drawn to particular occupations, but the occupations then have an effect on them. An interactional model is proposed to consider this. *Conclusion* The research questions pertaining to mental health are varied and will determine what mental health issues are of interest and the models of work applicable. There need to be more longitudinal studies and consideration of factors which the worker brings to the workplace (psychosocial issues, personality traits), as well as interpersonal issues and consideration of systemic, organizational, political and economic factors, including leadership styles.

■ **Key words** work – occupation – mental health – risk factors – interactional model – suicide – depression – alcohol abuse

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Introduction

While the importance of work for mental health has been widely acknowledged, the specific influences are less clear. There is a degree of self-selection in the choice of occupation, in terms of intellectual demands, physical and mental health and possession of some adaptive personality traits. There is also likely to be a bi-directional relationship between work and the worker, and the type of occupation can also influence physical as well as mental health.

A number of models have been proposed that consider the conditions involved in various occupations. The demand-control model [1] uses two dimensions, 'decision latitude' and 'psychological demands', thought to predict a broad range of health and behavioural outcomes. Decision latitude includes 'skill discretion' (the degree to which workers can use their individual skills and knowledge base), and 'decision authority' (how

much workers are able to determine their own conditions). Psychological demands include whether there is sufficient time to complete the work at hand, the volume of work, and whether there are conflicting demands placed on the worker. Researchers in a study of full-time workers across a number of occupations [2] used these parameters, but added 'hazardous work environment' and 'physical demands' to broaden the concept.

The effort-reward imbalance model [3] was intended to acknowledge an individual's "need for control". The model speculates that those with a high need for control respond in an inflexible way to work situations where there is high effort and low reward, becoming more stressed and disease-prone than those who have less need for control. There is considerable similarity between the demand-control and effort-reward imbalance models [4], but individual coping styles implicit in the effort-reward imbalance model are not recognized in the demand-control model, while the degree of control over work tasks is recognized in the demand-control model, but not in the other.

A third model, the person-environment fit model [5] examines the fit between the worker's abilities and the job demands, and between the worker's goals and aspirations and the supplies offered by the work environment. It is contended that incongruence can cause strain, activating individual coping mechanisms and related stress reactions.

■ Methodological considerations

Work may be categorized in a number of ways, based on the training required, the income generated, the social standing of the work, the characteristics of work, the workplace, and the workers, and the impact of interaction at work on workers. Not surprisingly, it is difficult to aggregate information about work types because studies have had different imperatives and used varying categories to describe the types of work and health outcomes. The task is complicated by the fact that some types of work that may appear to be the same within a broad job definition may vary significantly in the actual nature of the work entailed. For example, nursing in a busy emergency department has different priorities and risks from nursing in an old peoples' home; teaching in a small, well-resourced nursery school is not the same as teaching in a large, poorly resourced senior high school in the inner city.

There are a number of other methodological problems in comparing occupations. These include the effects of differing socio-demographic factors between occupations (e. g., comparing farmers, ballet dancers and keyboard operators), and within occupations (e. g., teachers working with adults in the inner city and those working in small remote schools), and the use of appropriate control or comparison groups and external factors (e. g., legal, political and economic issues). When considering the social class of occupations, it is important to consider income and assets as well as input into organizational control, as these have been found to have differential effects on psychiatric disorders [6].

There are a number of possible ways of categorizing mental health outcomes. One can measure general lifestyle constructs applicable to all workers, such as 'well-being', 'quality of life' or 'stress'. These are usually dimensional measures based on self-report or behavioral observation. There are 'caseness' measures, where individuals are identified as having reached a threshold to become categorical 'cases' of such disorders as depression, PTSD, anxiety, alcohol or substance abuse. There are economic or work-related indicators of the impact of work on the individual worker in terms of days off work, visits to doctor, lost income, and likewise the impact on the organization, measured in terms of total days off work, staff turnover, performance of managers and economic performance of the organization.

However, much of the earlier emphasis on mental health issues has related to 'stress' and 'burnout'. Stress was originally conceived as coming from external sources [7] and only later were the contributions of 'strain' within individual workers considered. While it is important to consider these concepts, they can be vague, variously defined and biased by the presence of depression and plaintive set. In work-related studies, there is also the risk of attributing causation to work-related factors and disregarding other factors. Despite these misgivings, 'stress' does act as a barometer of workplace conditions. A review of 'stress at work' [7] noted a shift over time from blaming individual workers to looking for external causes, which may include changes in the law, improving infrastructure, training and management practices.

Mental health outcomes for various occupations

The relationship between mental health and work has been investigated in terms of psychological outcomes associated with different occupations. The four outcomes that have received considerable research interest are clinically relevant psychological distress, depression, suicide rates, and drug and alcohol abuse.

■ Occupations and psychological distress

The development of validated and reliable measures of psychological morbidity and distress like the General Health Questionnaire (GHQ) [8] has led to their inclusion in work-related studies. An important example is in a British longitudinal study of over 11,000 civil servants [9, 10] where psychological morbidity was predicted by poor work social supports and low decision authority, high job demands and effort-reward imbalance. Using data from the Whitehall II study, Wall and colleagues [11] investigated minor psychiatric illness (i. e., depression and anxiety; as measured by the GHQ) amongst

British National Health Service (NHS) employees and compared rates to those from the British Household Panel Survey (BHPS) [12] consisting of data from 5,001 employed adults from a representative sample of British households over the same period (1993–1994). Here, high job demands (conflicting tasks, role conflict, high work pace and work overload) predicted future psychiatric caseness, with conflicting demands having a greater impact than work pace.

The NHS study was undertaken at a time when the organization was downsizing, and workers, thus, had the added stress of anticipated job loss and dealing with change. At the time, there was an overall decrease in work performance ('presenteeism') and an increase in days off work (absenteeism), particularly in women. Overall, the rates of GHQ cases were significantly higher for NHS staff (27.8%) compared to BHPS employed adults (17.8%), with the highest case rates for managers (33.4%), nurses (28.5%), doctors (27.8%) and professions allied to medicine (26.7%). For managers and doctors, women had significantly higher case rates than men (managers 41% vs. 27%; doctors 36% vs. 24%). However, the trend for higher case rates in women generally disappeared where men and women had comparable socio-economic backgrounds, suggesting that factors related to socio-economic background rather than gender contributed to these differences. The NHS study noted the protective effects of good social support from colleagues and supervisors during times of change. A lack of skill discretion and decision authority predicted future coronary disease, but did not predict future mental health. Overall, those with higher status jobs tended to take less time away from work.

Stressful work environments are also said to be risk factors for other mental health disorders [13] and the enquiry into workplace-related issues has now been extended to consider specific psychiatric diagnoses, which will now be reviewed.

Occupations at risk of depression

Most of the research in this area considers risk factors to depression related to specific occupations, with little work comparing rates of depression between occupations or even within particular occupations.

One exception to this is a study [14] that examined rates of major depression (MD) (defined by DIS/DSM-III) in a range of occupations as part of the follow-up phase of the ECA Study. Three occupational groups were found to have significantly elevated rates of depression: lawyers (OR 3.6, CI 1.4–9.3), teachers and counselors (OR 2.8, CI 1.2–6.8) and secretaries (OR 1.9, CI 1.2–3.1). On closer inspection, the teachers prone to depression were those involved in counseling and adult education, while rates among primary and secondary school teachers did not differ from the overall rates of depression among workers. A case-control study found no differences between French teachers and non-teachers in rates of DSM-IV major depression, anxiety disorders or substance abuse disorders [15]. However, they found major differences between the diverse teachers' categories [16]. As in Eaton's findings [14], the highest rates of major depression were found for teachers working in specialized settings, with particularly high rates for school counselors and psychologists.

In an Australian longitudinal study of teachers, there were no differences in the rates of DSM-IV major depression between those who stayed in teaching and those who left, but rates of depression were relatively high overall [17, 18]. The lack of gender differences was due to the comparatively high rates of depression in male teachers, who reported rates of help-seeking behavior similar to female teachers, and very low rates of alcohol and substance abuse.

Perceived lack of control over work has been linked to depression [19], but cross-sectional studies make it impossible to distinguish between cause and effect. One longitudinal study of 468 factory and blue-collar workers studied over 3 years in Japan [20] indicated that perceived lack of control over work, unsuitable jobs and poor workplace relations were predictors of depression identified with the Zung scale.

A study using data from the US National Health Interview Survey Disability Supplement [21] reported a profile of workers who were likely to stay at work while suffering depression. They found that good self-reported physical health and higher educational attainment were strongly associated with staying at work when depressed, but concluded that depression has impacts in terms of absenteeism and lower productivity. For those who stay at work, depression also impacts on their decision-making and ability to get along with others, particularly if they are in leadership roles or working in areas where poor performance affects the safety of others.

Occupations at risk of suicide

Charlton [22] analyzed over 13,000 suicides and 252,000 natural deaths in England and Wales. After demographics were controlled for, only doctors, nurses and veterinary surgeons had significantly higher rates of suicide. Another study also found that after controlling for demographic covariates of occupation (such as gender, race, age, and marital status), healthcare workers still have high rates of suicide: doctors (OR 2.31), dentists (OR 5.43), nurses (OR 1.58), and social workers (OR 1.52) have significantly high rates of suicide [23]. People in these occupations have access to effective means of suicide.

Police have been thought to have high suicide rates, and are one of the most studied groups in terms of suicide rates, but rates have been found to be only slightly greater than for men of their own age [23]. This was also the conclusion of a review of studies into police and suicide [24] which highlighted a number of methodologi-

cal problems in the research, including the lack of inclusion of psychosocial factors and a dearth of prospective studies.

We note the importance of controlling for socio-demographic variables. The suicide rate for laborers [25] and carpenters [26] is significantly higher than that for the general population. However, when gender (mostly male), marital status (mostly single), and other covariates are controlled for, the relative risk is the same as that for the equivalent working-age population.

Among 'frontline workers' (e. g., military personnel, fire fighters, ambulance workers), rates of suicide tend to be the same or lower than the general working population. Selection effects, such as pre-employment screening, may contribute to the relatively low rates of suicide [27]. For ambulance workers [28], the importance of emotional support at the workplace, particularly from supervisors and management, in preventing psychiatric morbidity was emphasized as a protective factor.

In the US mortality detail file of 9,499 suicides and 137,687 deaths from other causes [23], occupations low in suicide risk after controlling for demographic covariates included clerks (OR 0.85) and farm workers (OR 0.69), but a number of studies of farmers have found an increased suicide rate [27], even after controlling for gender and race. Suggested reasons for high rates included economic pressures, social isolation, a hazardous work environment, and lack of emergency medical and mental health care. It was suggested that farmers' rates vary considerably and relate to local issues [27], including catastrophes such as recent outbreaks of disease in their animals [29]. In comparison with US white males, suicide rates of Philadelphia fire fighters were significantly lower [30]. Compared with state and national rates for males, the rate of suicide among Boston fire fighters was also found to be significantly less [31]. Stack [23] reported occupations with high suicide risk as doctors (OR = 2.31), dentists (5.43), mathematicians and scientists (1.47), artists (1.30), nurses (1.58), and social workers (1.52).

The rates of suicide among 'blue-collar' workers (e. g. laborers, manual workers, farmers) tend to be high when compared to the general working population, and contain high proportions of men who are single or divorced. However, when demographic covariates are controlled, increased rates are no longer evident. Living in a completely rural area is a risk factor for men and women alike, with an increased risk for older men [22].

There have been inconsistent findings for male doctors, but female doctors are reported to have suicide rates of 3–4 times those of the working female population. For medical subspecialties, psychiatrists had twice the rates of suicide of their peers [32, 33], with the suggestion that doctors with a tendency toward mood disorders may select psychiatry [27]. Explanations for the increased rates in healthcare professionals include availability to means of suicide (such as doctors and nurses) and being in occupations that are client-dependent (i.e., where the occupation is financially dependent on others in distress), such as counselors and social workers. Access to lethal means in the medical profession (doctors, pharmacists, dentists, nurses) has been linked to corresponding high suicide risk [27]. This is thought to be a particular issue for anesthetists, but a British study found no difference between male anesthetists and other specialists, although doctors had twice the suicide rates of other men their age [32]. A psychological autopsy study of suicides in British nurses [34] found higher levels of current psychiatric disorder, of a history of deliberate self-harm, and of smoking and alcohol abuse in the suicide group.

Many healthcare providers may compound their difficulties through self-medication rather than seeking appropriate help, with the perceived stigma being cited as a significant problem [35]. Females are also said to have an increased risk of suicide where there are 'statistically infrequent occupation-based role sets' [23], such as female chemists, soldiers and doctors [27], with the suggestion that a male-dominated workplace may place additional stress on female workers in these occupations [27].

Stack [23] concluded that elevated risks for suicide in occupations that are neither client-dependent nor have easy access to the means of suicide may be due to occupational stress, or other correlates of suicide, such as psychiatric morbidity (i. e., people with suicidal personality traits may seek out occupations that have high suicide rates). Elevated risk may be due to a complex interaction between job factors such as work stress and access to means for suicide and other individual factors such as age and presence of a mental disorder [23]. Hawton [34] also highlighted the importance of considering previous history of psychiatric problems and self-harm when considering suicide rates at work.

■ Occupations at risk of alcohol and substance abuse

There are a number of occupations at high risk for alcohol problems, including bartenders, innkeepers, entertainers, physicians, salespeople, and army and navy personnel [36].

Plant [37] reported on male liver cirrhosis mortality rates for England and Wales in 1961. Company directors had the highest rates (22 times the average), followed by publicans and innkeepers, then workers in the entertainment industry (actors, entertainers, and musicians). Military personnel had high rates (3.5–4.0 times the average) as well as doctors (3.5 times). Judges, advocates, barristers and solicitors had rates twice the average.

Anthony and colleagues [38] reported that construction laborers, carpenters, waiters/waitresses, transportation workers, and those in moving occupations were more likely to have drug abuse disorders (alcohol and stimulants).

Ames and Janes [39] suggested four broad categories of problem drinking/drug abuse among the working population. These include 'normative regulation of

drinking', which includes elements of work that "form and maintain alcohol beliefs, values, and behaviors" (e. g., pressure to join in drinking rituals during or after work, high availability of alcohol); the 'quality and organization of work', which includes factors implicit in the demand-control model as well as factors affecting the culture of drinking behavior (e. g., sources of stress, boredom and how these are dealt with); factors external to the workplace, such as family (e. g., history of alcohol problems in the family) and drinking subcultures, where there are groups that arise within an organization (due to such factors as age or job identity) where drinking is normative.

In terms of availability, bartenders and innkeepers have high rates of alcohol problems, as well as actors, entertainers and musicians who also often work in places where alcohol and drugs are abundant [36]. Brewery workers also have high rates, double that of other workers [37]. There are also issues of self-selection that may apply here, as heavy drinkers or drug users may choose occupations in which these drinking or drug-use behaviors are accepted or encouraged. Low work control (or decision latitude) has been found to be related to alcoholism in men [40]. Predisposition to alcoholism may place workers at an elevated risk of developing alcohol abuse if exposed to unfavorable work conditions, such as that characterized by low work control. Hemmingsson and Lundberg [41] found that heavy use of alcohol in adolescence interacted with later low work control in relation to alcoholism.

Doctors are at risk of abuse of some substances available to the general public, most notably alcohol and of some that are not generally available, most notably prescription drugs such as hypnotics, analgesics, and specifically pethidine. Doctors have been studied with comparative frequency because they tend to have organized treatment programs and considerable public investment in their careers. Doctors and nurses also deal with people in pain, approaching death and challenging clinical situations, and substances are often used as a coping device [42]. Ambulance drivers tend to be involved in high-risk work, and are exposed to emotionally challenging situations with the potential for PTSD. If these situations are too frequent and in the context of poor emotional support in the workplace, some will cope by attempting to numb their emotional response with substance abuse [28, 43].

There are trends within the medical profession for different types of substance abuse: doctors in their 30s to 40s are more likely to abuse opiates [44], while doctors in their 40s to 50s are more likely to present with problematic use of alcohol that may have been undetected for many years [45–47]. Patterns of substance use and abuse may reflect earlier undergraduate use of licit and illicit substances and, as such, these patterns may change over time. There is a trend to higher rates of illicit drug use in medical students. A recent UK study of junior doctors [48] revealed that 11 % were regular cannabis users and 10 % were regular users of other recreational drugs such as ecstasy and cocaine, while 60 % drank alcohol above the safe drinking levels. This raises the possibility that younger doctors will have a profile that includes greater use of illicit drugs, more closely reflecting use in the general community.

A US group [49, 50] reported differences in usage by various medical specialties. Self-reported substance abuse and dependence were at highest levels among psychiatrists (who used more benzodiazepines) and emergency physicians (who used more illicit drugs), and lowest among surgeons. Comparatively, pediatricians and surgeons had overall low rates of use, except for tobacco smoking in surgeons. Anesthetists reported higher use of opiates. Nurses' substance abuse patterns more closely reflect the general population, again with differences between specialities. An anonymous study of 4,438 nurses [51] reported that when compared with nurses in women's health, pediatrics and general practice, emergency nurses were 3.5 times more likely to use cocaine and marijuana, nurses in oncology and administration were twice as likely to binge drink and psychiatric nurses were 2.4 times more likely to smoke cigarettes.

■ Occupations at risk from effects of exposure to trauma

Exposure to death, personal injury and violence for self and others is part of occupations such as the military, the police and security officers. For ambulance men and those engaged in body-handling, the involvement is with the violence inflicted on others. These experiences have been associated with onset of MD, PTSD and somatization disorder [52], and Engel has described a syndrome of multiple idiopathic physical symptoms (MIPS) following exposure to highly traumatic events [53]. There are increasing levels of violence in other occupational settings previously considered to be safe environments (for example, for high school teachers and hospital staff, especially where there is exposure to intoxicated patients). Several studies have pointed to the relationship between use of emotion-suppressing defenses [54] and later mental health problems (stress, alexithymia). A number of studies have pointed to the importance of social support in the months after traumatic events, and the importance of training and effective leadership where there is an expectation of ongoing exposure to traumatic events [28, 55, 56].

■ Impact of conditions away from the workplace

Differences in education level, personal and educational assets, and income are usually referred to as differences in 'social class'. Social class has been linked to specific types of mental health disorders. Muntaner et al. [6] noted the importance of considering their relative influences in a study that used data from two major US epi-

demiological studies: the National Comorbidity Survey (NCS) and the Environmental Catchment Area (ECA) follow-up of the East Baltimore residents. Analysis of the NCS data showed that lower financial and physical assets were associated with higher rates of mood, anxiety, alcohol, and drug disorders. In line with the demand-control model, lower level supervisors presented higher rates of depression and anxiety disorders than higher level supervisors.

This study showed an inverse association between financial and physical assets (such as home ownership) and anxiety, alcohol, and drug disorders. There are a number of reasons that account for external factors being overlooked or underplayed, including workers wishing to attribute all their woes to the workplace, workplace solidarity aimed at creating change in the workplace, or financial advantage, to maintain their own privacy or avoid personal stigma.

Events such as marital discord, chronic financial difficulties, chronic illness and death within the family are likely to impact on workers' mental health and performance. In considering the effects of the workers' domestic situations, both men and women with low control at work or at home had an increased risk of developing depression and anxiety [57]. Other important factors that can have an effect include the quality of social support, the personality style, and the previous experience of the workers.

Attributes that are apparent both at work and at home are likely to reflect personality styles. There is the question of whether specific occupations are associated with specific personality types, and, if so, whether this is due to a selection bias (i. e., the way in which workers mould jobs to suit their needs) or the impact of the work on the worker (i. e., whether the occupation moulds the individual worker) or whether there is an interaction between personality and work. A study investigating this issue concluded that the relationship is bi-directional [58].

An interactional model of work

The various models noted above are more applicable to some workplace issues than others and do not reflect the quality of workplace relationships or contributing personality styles. Using an interactional model, workers can be grouped, based on the type of work and the manner in which they interact with others in the work context.

Those who are on the 'front line', where they have contact with others in short bursts in times of crisis, e. g., military, firemen, police, ambulance officers, doctors and nurses in emergency departments, may be people who like to "do something" with energy and excitement. Survival of individual workers in crisis situations will depend on team morale, but the workers also have to deal with periods of 'downtime' while they are required to maintain a state of readiness for the next crisis.

A second group comprises those in longer term relationships with a defined group (e. g., client, patient), including most doctors and nurses, teachers, clergy, prison wardens, workers with refugees and homeless individuals, basically people interested in "helping others" within an institutional structure. This type of work also entails a growing need to work within increasingly complex organizations (and to comply with bureaucratic demands), and also to be aware of and deal with the complex psychosocial needs of those they serve. There is also the issue of the degree of 'client-dependence' as a risk factor for depression. In many areas, there are rising rates of requirements for greater participation by consumers, and also rising rates of verbal and physical assaults against these workers, all of which serves to increase their sense of frustration and powerlessness. The degree of organizational support and response is, therefore, very important.

Then, there are those who are self-employed, or in small businesses or work in an office or factory that may be part of a larger organization. Here, there may be some aspect of 'service' to the public, but the main interactions are with customers or within the workplace. Workforce well-being is very much tied up with the morale of the team and the organization and the worker's occupational status within the organization. These factors also affect workers' motivation and expectations of their work. Interactional aspects are determined by status within the organization, and the issues related to the demand-control model are most applicable to this group.

Finally, there are those who work at 'arm's length', who make policy decisions that affect others, e. g., planners, business and political leaders, senior public servants, judges. This work entails being able to make sound decisions, seeing "the big picture", and putting the needs of society above personal needs. There is some choice in how much they concern themselves with the outcomes of their actions on others. Supervisors have been found to be more stressed than managers [6, 9, 10], as the role of supervisor implies considerable demands and expectations without the corresponding responsibility or input into organizational decision-making. Depression and alcohol abuse are the two most frequently mentioned disorders to impact on the functioning of leaders. A study of World Bank employees [59] found that frequent travel and changes in plans affects partners and young children as well as the staff members themselves, which again reinforces that some of the effects extend beyond the workplace.

In the 'arm's length' category, there are less data available on the psychological well-being of leaders – much of the material available in the management literature focuses on issues concerning improving leadership style and performance. However, the individual qualities that the leader brings to their leadership roles are under increased scrutiny. Different leadership styles are likely to be more or less effective, depending on the organizational cultures and the political climate within which they operate. On an interpersonal front, a key factor is

the type of people the leader chooses for advice and support. Is it also likely that?

A systemic review of studies in the developed world noted that healthcare workers had higher rates of psychological ill health compared to non-healthcare workers [60] for reasons consistent with the demand-control model. The good news is that they noted that many of the problems are amenable to change and there are effective interventions, but more research is required using randomized and/or longitudinal designs.

Methodological issues in work-related research

In future research, the psychosocial risk factors to consider include the status of the occupation, the status of the worker within the occupation, physical risks, the degree of social cohesion, the degree of autonomy, decision latitude, discretion to use personal skills, training, personality characteristics of workers, psychological job demands, complexity, reward for effort, access to supervision and guidance, interactions both at work (including coercion and bullying) and away from work, as well as the quality of workplace leadership and the political and economic climate within which the work is occurring.

There are a number of recurring themes in relation to the work reviewed, including:

1. The need to consider both rates of physical and mental health disorders and risk factors, as these are often linked.
2. Constructs such as 'stress' and 'strain' are very nonspecific. It may be more useful to consider two or more concepts simultaneously (i.e., self-report and objective outcomes).
3. It is important to have general population rates available for comparison with work-related disorders and to control for socio-demographic variables, which may vary between occupational groups.
4. Studies comparing occupations can only point to trends and there is also a need for more qualitative work to highlight the specific issues in particular occupations and groups of workers.
5. There needs to be consideration of factors outside the workplace, including workers' personality style, previous experience, and social support systems, as well as the broader socio-economic context within which the workplace is set.
6. Most studies to date are cross-sectional studies that do not allow definition of causality; there is a need for more longitudinal studies.
7. There is a need to also consider the positive aspects of work and the workplace environment.
8. It is also important to consider the system within which the workers are operating. This includes consideration of the quality of leadership within the workplace, the responses from institutions to their workers and whether the supporting institutions are functional or dysfunctional.

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