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A Literature Review on the Relationship between Employment and Health:

How this Relationship may Influence Managed Long Term Care

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Abstract

Employment status may have implications for an individual's health status. A review of the literature on the relationship between employment and health demonstrates a consistent association between employment and better health and unemployment and poorer health. This association has been found for men, women, younger adults, older adults, and people with disabilities. The relationship between employment and better health appears to be bi-directional, with some evidence of health affecting employment and further evidence that employment, in turn, affects health. One possible cost-effective way to increase the health of members of Managed Long Term Care Systems is to promote and support the competitive employment of members.

A Literature Review on the Relationship between Employment and Health:

How this Relationship may Influence Managed Long Term Care

Managed Care continues to expand across the United States. For example, the state of Wisconsin is in the process of expanding a Managed Long Term Care System, Family Care, across the entire state of Wisconsin (<http://dhs.wisconsin.gov/lcicare/INDEX.HTM>). In Wisconsin each Family Care member is part of their own care team, which also includes at least a registered nurse and a care manager. These care teams help to determine how to best support the health and long term care outcomes the Family Care member needs and wants. Like other Managed Care Systems, Family Care functions to improve the health and safety of its members in the most cost-effective way.

Managed Long Term Care Systems provide a unique environment where many individuals in the long term care system have disabilities. In a health care focused environment, such as Managed Long Term Care, employment may only be addressed when there is a question about whether or not an individual is healthy enough to work. The assumption may be that poor health (albeit physical or mental health) limits employment. In other words, poor health limits employment and better health facilitates employment. But there is another possibility. Employment may actually improve health and unemployment may deteriorate health. If the goal is to improve health in the most cost-effective way, it is important to understand how an individual's employment may affect their health. If employment contributes to improving health status, efforts to increase participation in employment could reduce health care costs.

In order to determine whether health does in fact affect employment and/or employment improves an individual's health, the research literature was reviewed. Articles for this literature review were found via PsychInfo Index using EBSCOhost by simultaneously searching the keywords "employment" and "health". Any articles that were found using this technique and that studied the relationship between employment and health, specifically the direction of this

relationship were included in this literature review. Also, any additional articles found in the reference section of these articles and that also studied the relationship between employment and health were included in this literature review.

Employment is Related to Health

In this review of the literature, 33 different studies demonstrated that employment is related to health. These studies included 173,871 participants from 24 different countries. For example, the relationship between employment and health has been demonstrated with large samples of adults including 20,000 British individuals (Arber, 1997), 38,472 Europeans (Olsen & Dahl, 2007), 8,747 Austrians (Rasky, Stronegger, Freidl, 1996), 15,468 Finnish employees or job seekers (Virtanen, Liukkonen, Vahtera, Kivimaki, & Koskenvui, 2003), and 270 Norwegians (Claussen, Bjorndal, & Hjort, 1993). Furthermore, this relationship has also been found in young adult populations including British 16 and 17 yr olds who left school (Jackson, Stafford, Banks, & Warr, 1983; Stafford, Jackson, & Banks, 1980; Warr, Banks, Ullah, 1985), Australian school leavers (Winefield, Winefield, Tiggemann, & Goldney, 1991), and Dutch 18 to 26 yr olds (Taris, 2002). For aging adults (specifically individuals 60 years and older) engagement in productive activities (including paid employment, caregiving, volunteering, informal social assistance) has been shown to be associated with better functional status (ability to engage in activities of daily living) and better self-rated health (Hinterlong, 2006). Similarly, unemployed British older adults (ages 50 to 74) reported lower well-being than did those who were employed (Warr, Butcher, Robertson, & Callin, 2004).

Women. Many studies explored the relationship between employment and health with women only samples. Some women chose not to work, not due to ill health, but because they chose to spend their time taking care of their children and/or their household. Still other women chose to work and to take care of their children and/or their household. Some people may assume that multiple roles (e.g., being a housewife and having a career) would decrease a women's health due to stress and limited time to engage in healthy behaviors such as exercise

and sleep. Yet, when comparing employed women to women who are not working (including non-working housewives and the unemployed women), employment has not been found to be related to poor health (Repetti, Matthews, & Waldron, 1989). Rather, employment among women has been found to be related to better health (Adelmann, Antonucci, Crohan, & Coleman, 1990; Arber, Gilbert, & Dale, 1985; Jennings, Mazaik, & McKinlay, 1984; Roos, Bursrom, Saastamoinen, & Lahelma, 2005; Waldron & Herold, 1986; Waldron & Jacobs, 1988). In addition, Passannante and Nathanson (1985) found that Wisconsin women in the labor force had a lower death rate than Wisconsin housewives.

Some may argue that the detrimental effects of employment on health were not observed because, in a more modern society, men are helping women out with household duties; but even in more traditional cultures (e.g., Spain) female workers have been found to have better health status than housewives (Artazcoz, Borrell, Benach, Cortes, & Rohlfs, 2004). Furthermore, unemployed British single mothers (Baker, North, & The ALSPAC Study Team, 1999), unemployed British working class mothers (Parry, 1986), and unemployed American women on welfare (Chandler, Meisel, Jordan, Rienzi, & Goodwin, 2005; Corcoran, Danziger, & Tolman, 2004) had more mental health problems (including depression) than those who were employed. The findings on physical health have been somewhat more mixed. The British employed single mothers reported more cough/cold symptoms than did those who were unemployed (Baker et al., 1999), whereas employed American women on welfare reported better physical health than those who were unemployed (Corcoran et al., 2004; Horwitz & Kerker, 2001). In any case, employment does not appear to worsen the health of women with major disabling health conditions. Rather, the perceived health status was higher among women with major disabling health conditions who were employed than among those who were unemployed (Kutner, 1984).

People with Disabilities. The relationship between employment and health has also been demonstrated within populations of people with specific disabilities and overall, across

people with a variety of different types of disabilities. Overall, of the 47,377 adults (25 to 64 yrs old) with disabilities across the United States surveyed via the Behavioral Risk Factor Surveillance System those who were employed had less frequent mental distress (18%) than did unemployed individuals (40%). This relationship held up even when controlling for demographics and individual characteristics including age, sex, race/ethnicity, education, marital status, health risk behaviors, body mass index, health care coverage, and self-rated health (Okoro, Strine, McGuire, Balluz, & Mokdad, 2007).

Other studies provided further examples of the relationship between health and employment. For example, when health related quality of life (HRQOL) was measured via the Short Form Health Survey (SF-36), employed Canadians with spinal cord injury (Leduc & Lepage, 2002) and employed Multiple Sclerosis outpatients (Miller & Dishon, 2006) reported a better HRQOL than did unemployed individuals with the same conditions. Likewise, employed Australian men living with HIV/AIDS had a higher self-reported health, whereas those who were unemployed were more likely to have experienced HIV/AIDS related illness and have a higher score of psychological distress (Fogarty, Zablotska, Rawstorne, Prestage, & Kippax, 2007). Furthermore, in a literature review on the effects of employment on people with Schizophrenia, Marwaha and Johnson (2004) concluded that work was related to a decrease in symptoms and a higher quality of life. A relationship between unemployment and poorer mental health (more specifically depression) was also found for adults with physical disabilities (Turner & Turner, 2004) and for young adults (20 to 25 yrs old) both with and without intellectual disabilities (Jiranek & Kirby, 1990). More specifically, young adults who were competitively employed (as compared to those who were unemployed) had higher psychological well being (Jiranek & Kirby, 1990).

With the association between employment and better health (including physical health, mental health, and well being) demonstrated across a variety of populations, including adults, women, youth, older adults, and people with disabilities, the direction of the relationship needs

further clarification. More specifically, are healthier people more likely to work and unhealthy people less likely to work, or does employment actually improve health while unemployment decreases health?

The Effect of Health on Employment: The Healthy Worker Effect

Eight of the reviewed studies, with a total of 5,378 participants from four different countries, supported the premise that health determines employment, which is often referred to as healthy-worker effect. One way to test the healthy-worker effect is through longitudinal studies. For example, Taris (2002) found that Dutch youth (18 – 26 yrs old) with better mental health were more likely to be employed at a later date. Furthermore, Mastekaasa (1996) found that psychological distress predicted whether a Norwegian would be laid off four years later even when fear of job loss was controlled for, and Claussen et al. (1993) found that unemployed Norwegians with a psychiatric diagnosis were 70% less likely to obtain a job, while those with a normal performance on psychometric testing had an increased chance in obtaining reemployment. In addition, in studies on middle-aged American women (Waldron, Herold, Dunn, & Staum, 1982; Waldron & Jacobs, 1988) researchers found poor health predicted more labor force exits and less labor force entrances. Another way to study the health-worker effect longitudinally is to study the effect of the progressive worsening of an illness on employment. For example, in a sample of 702 Australian men living with HIV/AIDS, those who had been living with HIV/AIDS for a shorter period of time were more likely to be employed (Fogarty et al., 2007). The conclusion was that the progressive worsening of health decreased employment.

The healthy-worker effect can also be demonstrated by first increasing health via some type of treatment, and then observing whether employment increases. Although this was not tested directly, Ipsen (2006) did find that when individuals with physical disabilities exercised and increased their overall health (decreased secondary health conditions); the likelihood they were employed increased by 8.4%, indicating that increasing health via exercise may in fact increase employment. In a more direct test, Lichtenstein, Yan, Bala, Hanauer (2004) found

that 34% of individuals who achieved clinical remission from Crohn's disease were employed compared to 16% of those who were not in remission. Likewise, in a study by Simon et al. (2000), the greater the clinical improvement, the more likely adults with major depression achieved employment. Finally, literature reviews can also provide evidence of the healthy-worker effect. Reviewing multiple studies allows one to assess whether a finding has been replicated, and may be better suited to look for patterns to help understand the direction of a relationship. After reviewing studies on employment and women's health, with a particular focus on studies that were longitudinal, Repetti et al. (1989) concluded that good health does in fact increase the probability that women will be employed.

The Effect of Employment on Health

Although the above eight studies found a healthy-worker effect, thirteen of the reviewed studies, with a total of 11,552 participants from five different countries, concluded that a converse relationship between health and employment actually exists, with employment improving health. One reason to suspect that the healthy-worker effect is not the only way that employment and health are associated is that even though people with physical disabilities are less likely to be employed than those without disabilities, people with physical disabilities are also five times more likely to be involuntarily unemployed, suggesting health is not the only reason for unemployment (Turner & Turner, 2004). Furthermore, the relationship between unemployment and depression is greater for individuals with physical disabilities, which may be explained by the lower occurrence of employment for individuals with physical disabilities. Further supporting this hypothesis, regression analyses controlled for functional limitations, demonstrating that the relationship between unemployment and depression was not due to a functional limitation. There was very little overlap between the adverse effects of physical disabilities and the adverse effects of employment, suggesting that unemployment has an effect on the health of people with physical disabilities that goes beyond their disability (Turner & Turner, 2004).

Again, longitudinal studies are one useful way to determine the direction of a relationship. Just as longitudinal studies were used to demonstrate a healthy-worker effect, longitudinal studies have also been used to demonstrate that employment precedes good health and unemployment precedes poor health. For example, when researchers studied the employment and health of 101 British men (Layton, 1986) and 1150 British youth (17 yrs old) (Warr, Banks, & Ullah, 1985), changes in health were typically observed only after changes in employment, with subsequent job loss associated with a decrease in general health and reemployment associated with an increase in general health, suggesting that employment influences health. Furthermore, when only unemployed men were studied, those who remained unemployed nine months later reported health deterioration, while those who were reemployed reported improvements in health (Warr & Jackson, 1985). In addition, youth who became unemployed after leaving school reported poorer health, an increase in symptoms, although gaining employment did not seem to change reported health (Banks & Jackson, 1982). In contrast, Wanberg (1995) found that when American women moved from unemployment to satisfactory employment, they reported an increase in mental health, whereas those who remained unemployed reported no changes in mental health.

When Graetz (1993) studied the effects of employment and unemployment on the health of Australian youth (16-25 yrs old), he did several things to further rule out the healthy-worker effect as an explanation of the association between employment and better health. To isolate the effects of employment on health (and not the reciprocal), respondents who reported prior health problems were eliminated from the analysis. Furthermore, differences in health were tested both before and after a change in employment status. When comparing those who were employed and remained employed with those who were employed and became unemployed, there were no differences in health when both were employed, and there was no change in health for those who remained employed, but there was an overall decrease in health (as measure by the General Health Questionnaire) for those who became unemployed. A similar

result was found in another study (Linn, Sandifer, & Stein, 1985) where American Veterans (35-60 yrs old) did not differ in health when all participants were employed, but the half that became unemployed ($n = 30$) had increased symptoms of somatization, depression, anxiety, days in bed, visits to physician, medications, and poorer self-rated health as compared to those who remained employed. A similar result was found when comparing those who were unemployed and remained unemployed with those who were unemployed and became employed (Graetz, 1993). There were no differences in health when both were unemployed, but while those who remained unemployed remained in poor health, those who became employed reported an increase in health. Finally, when comparing students who became employed with students who became unemployed, before leaving school there was no difference in health, but those who became employed reported an increase in health, while those who became unemployed reported a decrease in health (Graetz, 1993). Likewise, studies on British youth (16 yr olds who left school) (Jackson et al., 1983) and Australian school leavers (Winefield et al., 1991) found that psychological distress decreased after individuals' gained employment, and psychological distress increased when employment status changed from employment to unemployment (Jackson et al., 1983). Winefield et al. (1991), like Graetz (1993) and Linn et al. (1985), found no differences in health at the start of the study (when all participants were students), but Jackson et al. (1983) did find differences in psychological distress that could predict these trends. Those who were unemployed and remained unemployed were more distressed at the beginning of the study than those who were unemployed but became employed. Also, those who were employed and became unemployed were more distressed at the beginning of the study than those who were employed throughout the course of the study.

Another way to assess the effect of employment, or lack thereof, on health is to observe situations during which job loss cannot be attributed to poor health. Business closing or restructuring that affects all employees within a company provides such an opportunity. For example, 666 British employees lost their jobs because of privatization. All workers had to find

new jobs. Those who remained unemployed or found insecure reemployment had increased minor psychiatric morbidity and consultations with a general practitioner. Furthermore, those permanently out of work had more longstanding illnesses than did those who found secure reemployment (Ferrie, Martikainen, Shipley, Marmot, Stansfeld, & Smith, 2001). Likewise, after a furniture factory closed, those former Austrian employees who remained unemployed a year later were more likely to report poor psychological health, poor physical health, and more health service use than those who were reemployed, although 56% of poor physical health cases could be attributed to former work history (Studnicka et al., 1991).

In a more proactive assessment of the effects of employment on health, researchers have tested the effects that specific treatments, implemented to increase the competitive employment, have had on health. For example, McFarlane et al. (2000) compared two such treatments, family-aided assertive community treatment (FACT) and conventional vocational rehabilitation (CVR), on the employment rates of a mostly unemployed sample of individuals who attended two community mental health centers. Although FACT did increase competitive employment rates more than CVR did, the overall mental health symptoms of individuals in both treatment groups improved. Likewise, for both treatment groups, the overall number of hospitalizations decreased. The symptom improvement effect was slightly better for those individuals who received FACT (the treatment that increased employment at higher rates). Overall, at most time points, those who were employed had fewer symptoms than those were unemployed. As for hospitalization rates, they were lower for those who achieved competitive employment compared to those who remained unemployed. These results are encouraging because they indicate that actively implementing treatments to increase employment (specifically competitive employment) may in fact improve the health of individuals with a mental illness. However, these results should be interpreted with some caution as the changes in symptoms and hospitalizations were only evaluated in a pre-post test design. Stronger

experimental tests (e.g., the inclusion of a control group) will have to be conducted before making any firm conclusions in this regard.

Reciprocal Relationship between Employment and Health

As stated previously, the Repetti et al. (1989) review article supported the healthy-worker effect. In contrast, a more recent meta-analysis of 16 longitudinal studies (Murphy & Athanasou, 1999) found that gaining employment increases mental well-being by an effect size of .54 and losing employment decreases mental well-being by an effect size of .36. Furthermore, Repetti et al. (1989) did conclude that employment does appear to improve the health of at least some women. Given the present evidence, the relationship between employment and health does not seem to be unidirectional. Rather, while health may affect who obtains employment and who remains employed, it appears that employment also increases health while unemployment decreases health. Such a reciprocal effect was observed by Adelman et al. (1990). In addition, although Waldron and Jacobs (1988) found that health predicted employment status in a longitudinal study, they also found that employment status predicted health for unmarried women, black women, and blue collar married women, and employment was associated with poorer health for white collar married women.

Discussion

The association of employment and good health has been continuously demonstrated (e.g., Murphy & Athanasou & Repetti et al., 1989). Furthermore, this relationship appears to be bi-directional at least in some cases (Adelman et al., 1990; Repetti et al., 1989; Waldron & Jacobs, 1988), with health influencing employment, the healthy-worker effect (e.g., Taris, 2002; Waldron et al., 1982) and employment influencing health (e.g., Graetz, 1993), with employment improving health and unemployment decreasing health. Although poor health may continue to be a barrier to employment, employment may also be a way to better health.

The fact that not only can health affect employment, but also employment can affect health has implications for Managed Care, specifically for Managed Long Term Care Systems,

whose goal is to improve the health of members in the most cost-effective way. Based on this information, it would make sense for care teams to support or to at least explore the employment goals of members. By viewing employment as one way to improve health, employment may become a desirable outcome of Managed Long Term Care Organizations. Rather than waiting for an individual's health to improve before providing and supporting employment services, employment could be promoted and encouraged as one way to improve health. Furthermore, when evaluating quality of Managed Long Term Care Systems, members' employment status may become an important outcome that cannot be ignored.

Not only is the improvement of health a primary goal of Managed Care, but improving health should ultimately reduce health care costs, another benefit for Managed Care. For example, as reported previously, services to increase employment also decreased the symptoms and hospitalizations of individuals with mental illness (McFarlane et al., 2000). The assumption is that reductions in symptoms and hospitalizations reduce health care costs. In other studies, although improvement in health led to improvement in employment (rather than the reciprocal), the possible end result was still the same: a possible reduction in health care costs. For example, not only was the remission of Crohn's disease associated with increase employment, but it was also associated with reduced hospitalizations and surgeries, thus presumably lower health care costs (Lichtenstein et al., 2004). Likewise, Simon et al. (2000) found that, along with an increase in employment, adults with depression who demonstrated greater clinical improvement also had a possible decrease in health care costs.

Future Research

Although some studies reviewed in this paper demonstrated that employment can influence health, no studies directly tested the influence of actively increasing an individual's employment on the individual's health within a Managed Long Term Care System. Future research should explore whether the active promotion and support of employment by managed care teams actually increases employment and whether increases in employment subsequently

lead to increases in the health of the members of Managed Long Term Care Systems.

Longitudinal research could be designed to track both the timing of changes in employment and changes in health. Further, to help reduce alternative explanations a randomly assigned control group could also be concurrently tracked longitudinally.

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