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Case Workers Report Greater Caffeine Intake

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Abstract

Due to roles requiring higher levels of emotional management, some case workers report greater job stress and lower well-being. Caffeine consumption and withdrawal can affect well-being and caffeine is consumed more frequently among workers in stressful positions. This project identifies and describes patterns for usage of caffeine, domains of workplace well-being, and correlations between caffeine intake and workplace well-being among case workers. Case workers (n = 31) completed an online survey about demographic and job characteristics, caffeine use, and workplace well-being. Caffeine use was ~321 mg/d with common occasions of working towards a deadline and after not getting enough sleep. Well-being was moderate across all domains, range 64.5% for employer care to 77.4% for both work satisfaction and intrusion of work into private life. As caffeine intake increased work satisfaction increased among case workers in roles with higher emotional labor (r = 0.35). This is the first study to identify and describe elevated caffeine intake and associations with well-being among case workers.

Keywords: Caffeine; Well-Being; Workplace Health; Emotional Labor; Case Work; Social Work

List of abbreviations: OCFS: Office of Child and Family Services; CPS: Child Protective Services; Other: those not working in OCFS/CPS; DSM: Diagnostic and Statistical Manual of Mental Disorders; BS: Bachelor of Science; MS: Master of Science; LMSW: Licensed Master Social Worker; LCSW: Licensed Clinical Social Worker

Introduction

Due to the nature of their work, case workers are at increased risk for burnout, disengagement, and lifestyle related diseases such as diabetes and hypertension [1-3]. Case workers dedicate their time and energy to addressing the needs of all people to improve individual well-being and the well-being of society [4]. Excessive anxiety may interfere with case workers' performance and ability to cope with stressful situations [3,5]. Further, case workers in roles requiring higher levels of emotional management report greater job stress and lower well-being [5,6].

Caffeine, the most widely used psychoactive stimulant in the world [7], is consumed more frequently among workers in stressful positions [8,9]. With coffee as the most commonly consumed beverage in the United States (US) [10] average daily caffeine intake ranges from 145 – 292 mg/d [11,12]. Further, workers in roles with higher psychological demand consumed ~2 caffeinated beverages (~310 mg/d) daily [8]. Caffeine consumption and/or withdrawal can lead to increased anxiety, irritability, and insomnia thus affecting well-being [13,14]. The current DSM-5 recognizes these and similar drug addiction traits as criteria for caffeine use disorder [15]. A recent study in Americans identified 11% of the population report met at least 6 of the DSM-5 criteria [16] and had average intake of 292 mg/d (~1.75 – 3 cups/day) [12]. While ample literature exists describing caffeine intake, in general, no known literature exists describing caffeine intake among case workers.

The World Health Organization defines mental well-being as "a state in which every individual realizes his or her own potential, can cope with normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her own community [17]". Numerous studies exist evaluating well-being in the workplace [5,6] and interventions to improve workplace well-being [5,18]. Reduced perceptions of workplace well-being may interfere with case workers' ability to cope with stressful situations [19]. Further, healthier well-being is recognized as a key psychosocial factor for case worker success and retention [4,18,20]. However, no known literature includes evaluation or interventions addressing caffeine intake. There is a critical need to describe caffeine usage patterns that may affect the well-being of case workers.

The purpose of this project is to identify and describe 1) patterns for usage of caffeine, 2) domains of workplace well-being, and 3) correlations between caffeine intake and workplace well-being among case workers.

Materials and Methods

This cross-sectional study was approved by Buffalo State College, State University of New York Institutional Review Board. Case workers in the United States were recruited with the intent of snowball sampling. A brief study description with a link to the online questionnaire was provided and included a request to share the survey with other case workers. Upon entry into the survey, respondents provided consent in accordance with the Ethical Principles for Medical Research Involving Human Subjects, outlined in the Helsinki Declaration. Data from the surveys were downloaded to a secure database. Due to the nature of questions in the workplace well-being questionnaire [21] and expected time (~20 min) to complete the all questionnaires, the survey was administered through Qualtrics® to maintain confidentiality and maximize complete responses.

Demographic and Job Questionnaires

To describe and compare characteristics of respondents, two questionnaires-demographic and job were completed first. The demographic questionnaire included questions such as gender, income, and race and ethnicity. The job questionnaire included education and training, percent of time spent working at different locations - in office, remotely, and in direct contact with cases - along with an open-ended description of occupation. The two questionnaires allowed a description of the characteristics of the respondents and provided greater detail to assess similarities and differences within and between the questionnaires to further categorize respondents as Office of Child and Family Services (OCFS)/Child Protective Services (CPS) or Other (those not working with OCFS/CPS).

Caffeine Use Questionnaire

To quantify and describe sources, amounts, and frequency of usual daily caffeine intake (mg/d) [22], respondents answered questions such as: do you drink caffeinated coffee/tea/soda/etc?; how often do you drink caffeinated coffee?; and, on the days you drink caffeinated coffee, how many cups (one cup = 8 fluid ounces = 237 mL)?. Amount of caffeine consumed was estimated based on information from the Mayo Clinic and included all reported caffeine sources [12]. Subjects also answered questions to 1) identify reasons for consumption; 2) quantify frequency of occasions; and 3) estimate amounts at those occasions for consuming caffeine. For example, to describe reasons for consuming or not consuming caffeinated products, subjects indicated importance ratings on a Likert scale (eg. very important through very unimportant and does not apply to me), including but not limited to: I like the taste; I want the energy boost; It makes me jittery; and, It makes it harder for me to fall asleep.

Workplace Well-being Questionnaire

To assess domains of workplace well-being, case workers completed the workplace well-being questionnaire [21]. This self-report questionnaire scored individual workplace well-being low, medium, or high in four domains: work satisfaction, organizational respect for the employee, employer care, and intrusion of work into private life. The questionnaire included questions on a Likert scale from 0 "Not at all" to 4 "Extremely" with score assigned based on the response.

Work Satisfaction: Ten questions are scored with totals indicating low (0-11), medium (12-30), or high (31-40) work satisfaction. This measure indicates the degree to which the respondent views their work as fulfilling and increasing their self-worth, provides life with some purpose and meaning, and advances their skills.

Organizational Satisfaction: Seven questions are scored with totals indicating low (0-7), medium (8-21), or high (22-28) organizational respect for the employee. This measure indicates whether the respondent judges senior persons in their organization as trustworthy and having ethical values as well as whether the organization values its staff and treats the respondent well.

Employer Care: Seven questions are scored with totals indicating low (0-7), medium (8-21), or high (22-28) employer care. This measure indicates whether the respondent feels their supervisor is caring, willing to lend an ear, understanding about work concerns, and treats the respondent as they wish to be treated.

Intrusion of Work into Private Life: Seven questions (one reverse scored) are scored with totals indicating low (0-5), medium (6-17), or high (18-26) intrusion of work into private life. This measure indicates whether the respondent feels stressed and pressured at work to meet targets, finds it hard to 'wind down' after work, feels work intrudes into private life, and negatively impacts self-esteem.

Data analysis

Demographic and job characteristics are described using count and frequency (%). Daily caffeine intake (mg/d) is described using mean and standard deviation (SD). Caffeine sources and situations of caffeine consumption for "moderately important" through "very important" reasons for consuming/not consuming caffeine are described using count and frequency (%). Workplace well-being domain scores are described using mean and SD with low, medium and high categories described using count and frequency (%). Pearson's r correlation is used to describe the relationship between daily caffeine intake and workplace well-being score. To compare OCFS/CPS and Other, differences between groups for categorical variables are analyzed with Chi-square; and, differences between groups for continuous variables were analyzed with t-tests. Due to the small sample size, Cohen's d effect sizes were used statistically significant differences. Data were entered and analyzed in IBM SPSS 24.0 and considered significant if $p < 0.05$ with effect sizes small 0.2 - 0.49, medium 0.5 - 0.79, and large ≥ 0.8. 32 respondents gave consent and began the questionnaire. One respondent did not complete the questionnaire beyond job questionnaire leaving 31 adequately completing questionnaires and included in the final analyses.

Results

Demographics

The sample was primarily female, white/Caucasian and Other (those not working with OCFS/CPS). While 7 respondents self-identified a similar agency of employment, other responses indicated these case workers were engaged in different roles (about half OCFS/CPS and half Other) with differing responsibilities throughout the agency. All other respondents are employed with other agencies in other areas of the region (Table 1).

	All (N=31) n (%)	OCFS/CPS (n=11) n (%)	Other (n=20) n (%)	p-value
Gender				0.451
Female	30(96.8)	11(100)	19(95)	
Other	1(3.2)		1(5)	
Marital Status				0.090
Single	8(25.8)	1(9)	7(35)	
Married	19(61.3)	10(91)	9(45)	
Divorced	1(3.2)		1(5)	
Living with significant other	3(8.7)		3(15)	
Household Income				0.194
<$50,000	9(29)	1(9)	7(35)	
$50,000-99,999	14(45.2)	6(55)	8(40)	
>$100,000	8(25.8)	4(36)	4(20)	
Do not wish to provide	1(3.2)		1(5)	
Race and Ethnicity				0.609
American Indian or Alaskan Native	1(3.2)		1(5)	
Black or African American	1(3.2)		1(5)	
White/Caucasian	28(90.3)	11(100)	17(85)	
Other	1(3.2)		1(5)	
Occupation Category				
OCFS/CPS†	11(35.5)			
Other	20(64.5)			
Social Worker Level*				0.049
BS	14(45.2)	7(64)	7(35)	
MS	3(9.7)	1(9)	2(10)	
LMSW	5(16.1)		5(25)	
LCSW	5(16.1)		5(25)	
Other	14(12.9)	3(2)	1(5)	
Time Employed as Social Worker				0.332
< 5 years	10(32.3)	5(45)	8(40)	
≥ 5 years	18(58.1)	6(55)	12(60)	
% Time Work on Cases in Office				0.390
<50%	11(35.5)	5(45)	6(30)	
≥50%	30(64.5)	6(55)	14(70)	
% Time Work on Cases Out of Office				0.664
<50%	24(77.4)	9(82)	15(75)	
≥50%	7(22.6)	2(18)	5(25)	
% Time in Direct Contact with Cases				0.291
<50%	13(42.0)	6(55)	7(35)	
≥50%	18(58.1)	5(45)	13(65)	

*$p < 0.05$ between OCFS/CPS and Other

Table 1: Demographic and Job Characteristics of 31 case workers

Caffeine Use

For all case workers, usual daily caffeine intake was 320.7 SD 218.9 mg/d with coffee as the most common caffeine source. The most frequent occasions for caffeine consumption include: while working towards a deadline and while performing your normal daily routine after not getting enough sleep the night before. Respondents most frequently agreed they consume caffeine because it provides a boost or jolt of energy. The most frequent important reasons for consuming caffeine included: I like the taste; I want the energy boost; it helps me stay awake and alert; and, it helps me concentrate (Table 2).

	All (n=31)	OCFS/CPS (n=11)	Other(n=20)	p-value††	Effect size
	Mean (SD)	Mean (SD)	Mean (SD)		
Usual Daily Intake (mg/d)	320.7 (218.9)	340.9 (269.0)	308.3 (189.5)	0.704	
	n(%)	n(%)	n(%)		
Sources					
Soda	14(45.2)	6(54.5)	8(4.00)	0.436	
Tea	19(61.3)	6(54.5)	13(65.0)	0.567	
Coffee	26(83.9)	9(81.8)	17(85.0)	0.818	
Energy Drinks	3(9.7)	1(9.1)	2(10.0)	0.935	
Chocolate	27(87.1)	10(90.9)	17(85.0)	0.639	
Excedrin	12(38.7)	5(45.5)	7(35.0)	0.567	
No Doze	1(3.2)		1(5.0)	0.451	
Situations Consume Caffeine					
Playing video games	3(9.7)	2(18.2)	1(5.0)	0.235	
Participating in a sports event	4(12.9)	2(18.2)	2(10.0)	0.516	
Working towards a deadline	21(67.7)	7(63.6)	14(70.0)	0.717	
Staying up late	13(41.9)	4(36.4)	9(45.0)	0.641	
Performing normal routine after not enough sleep	27(87.1)	8(72.7)	19(95.0)	0.077	
Don't drink during any of these*	3(9.7)	3(27.3)		0.014	0.195
Reasons why					
Like the taste	26(83.9)	8(72.7)	18(90.0)	0.211	
Want energy boost*	24(77.4)	6(54.5)	18(90.0)	0.024	0.165
Gives me a rush	7(22.6)	3(27.3)	4(20.0)	0.643	
Helps me concentrate	19(61.3)	5(45.5)	14(70.0)	0.179	
Helps me stay awake and alert*	24(77.4)	6(54.5)	18(90.0)	0.024	0.165
Helps my athletic performance	1(3.2)		1(5.0)	0.451	
Friends drink them a lot	3(9.7)	2(18.2)	1(5.0)	0.235	
Fits my self-image	3(9.7)	1(9.1)	2(10.0)	0.935	
Good for my health	5(16.1)	1(9.1)	4(20.0)	0.429	
Reasons why not†					
Don't like the taste*	7(23.3)		7(35.0)	0.033	
Makes me jittery**	15(50.0)	1(10.0)	14(70.0)	0.002	0.153
Gives me headaches*	7(23.3)		7(35.0)	0.033	0.320
Don't like the 'crash' after jolt*	12(40.0)	1(10.0)	11(55.0)	0.018	0.152
Harder for me to fall asleep	18(60.0)	4(40.0)	14(70.0)	0.189	
Hurts my athletic performance	1(3.3)		1(5.0)	0.472	
Too expensive	4(13.3)	2(20.0)	5(25.0)	0.760	
Friends don't consume caffeine	1(3.3)		1(5.0)	0.472	
Doesn't fit my self-image	1(3.3)		1(5.0)	0.472	
It's bad for my health*	8(26.7)		8(40.0)	0.020	0.182
Agree with typical effects					
Provide a boost or 'jolt' of energy*	21(67.7)	5(45.5)	16(80)	0.049	0.125
Improve concentration/memory	12(38.8)	5(45.5)	7(35.0)	0.567	
Improve athletic performance	4(12.9)	1(9.1)	3(15.0)	0.639	

†30 responses; ††OCFS/CPS compared to other
*$p < 0.05$, **$p < 0.01$
Table 2: Caffeine intake amounts, sources, situations, and reasons among 31 case workers

Workplace Well-being

For all case workers, scores for workplace well-being were medium across all domains with the frequency of respondents scoring medium ranging from 64.5% for employer care to 77.4% for both work satisfaction and intrusion of work into private life (Table 3).

	All (N=31)	OCFS/CPS (n=11)	Other (n=20)	p-value†	Effect size
	Mean(SD)	Mean(SD)	Mean(SD)	Mean(SD)	
Work satisfaction*	20.5(7.6)	15.9(7.1)	23.1(6.6)	0.009	0.214
Organization respect for employee	12.7(6.0)	10.4(5.9)	14.0(5.7)	0.106	
Employer care	15.3(6.8)	13.6(6.8)	16.2(6.8)	0.323	
Work intrusion into private life**	13.8(5.2)	16.6(4.4)	12.3(5.1)	0.023	0.167

†OCFS/CPS compared to other
*$p < 0.05$; **$p < 0.01$
Table 3: Workplace well-being by domain among 31 case workers

Workplace Well-being and Caffeine Use

No significant correlations existed between caffeine intake and any of the four domains of workplace well-being among all case workers.

Exploratory Comparison of OCFS/CPS and Other

About half of Other were licensed social workers compared to and Other none among OCFS/CPS (p = 0.049) (Table 1). There were no significant differences in daily caffeine intake between OCFS/CPS (Table 2). A larger percentage of Other compared to OCFS/CPS consume caffeine because: I want the energy boost (p = 0.024, d = 0.2) and it helps me stay awake and alert (p = 0.024, d = 0.2); and, do not consume caffeine because: it gives me headaches (p = 0.033, d = 0.3) (Table 2). Work satisfaction (p = 0.009, d = 0.2) and intrusion of work into private life (p = 0.023; d = 0.2) were significantly lower among OCFS/CPS compared to Other (Table 3). There was a stronger, but weak, positive correlation (r = 0.35) between caffeine intake and work satisfaction among OCFS/CPS compared to Other (Figure 1).

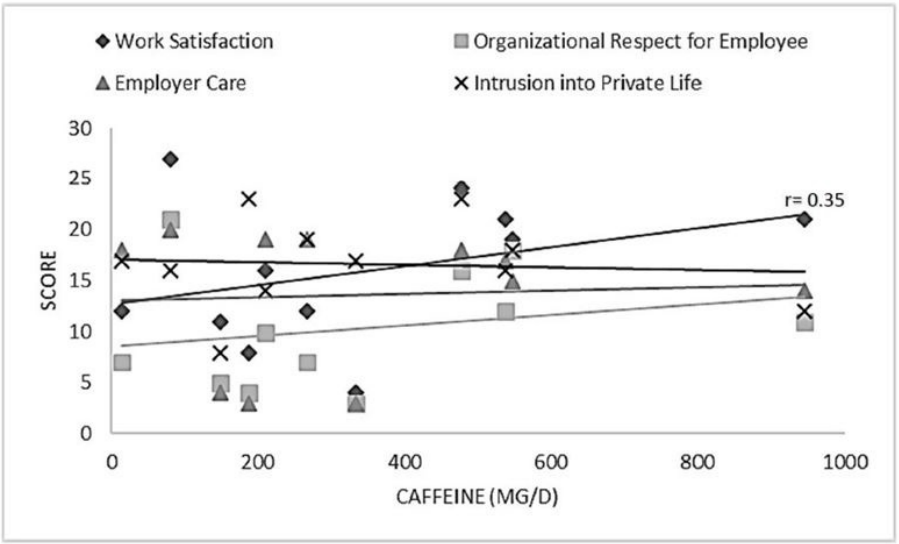

Figure 1: Correlation between caffeine intake and domains of workplace well-being among OCFS/CPS case workers

Discussion

Average daily caffeine intake was ~321 mg/d. In perspective, 8-ounces of standard home-brewed coffee is ~95 mg/d [12]. Compared to those in a community social service occupation, average caffeine intake is 91% higher among these case workers [11] with similar common sources of caffeine - coffee and tea [11,16,23,24]. Compared to other college graduates and other adults average intake is 10-86% higher among these case workers [16,23]. This sample is primarily (96.8%) female and compared to other females, average daily caffeine intake is 126% higher [23]. Primary reasons and occasions for consuming caffeine among these case workers related to caffeine's psychoactive effects – wakefulness, alertness, and energy. Reasons for caffeine use have primarily been described among adolescents and college students with these younger populations indicating reasons, wakefulness and concentration, similar to case workers [25,26]. It may be these habits develop in college and continue throughout adulthood. Overall caffeine intake in this sample of case workers is approximately double trends by age, gender, occupation, and education with similar sources and reasons for use. Further research is needed to compare average daily, timing, and reasons/occasions for caffeine intake among case workers.

Workplace well-being was medium across all domains in this sample. A dearth of research exists describing domains of workplace well-being. A single study was found that included comparable well-being domains. Lee and Jang in central Texas examined the relationship between social support and work/life challenges in social workers [27]. While this study did not use the same questionnaire, similar domains were evaluated. For example, the domain work-life conflict is similar to intrusion into private life and case workers in the current study reported a 141% greater intrusion of work into their private life compared to work-life conflict. In addition, employer support is similar to employer care and these case workers reported 71% lower employer care compared to employer support. Next, organizational support is similar to organizational respect for the employee and case workers reported 64% lower organizational respect for the employee compared to organizational support. Finally, the combinations of peer and client support are similar to work satisfaction with case workers in both studies rating this well-being domain similarly [27]. Taken together, the findings of the current study and another indicate wide variation in workplace well-being. These varying responses indicate a strong need to identify and describe factors related to domains of workplace well-being.

No significant correlations were identified between caffeine intake and workplace well-being among all case workers. While a recent study also found coffee was not associated with well-being [28], no known research exists evaluating caffeine intake and workplace well-being among caseworkers. However, given the potentially adverse effects of caffeine intake and/or withdrawal [13,14], the plethora of research on well-being among case workers and the dearth of research comparing the two, future well-being studies should include caffeine intake amounts, reasons, and occasions.

Exploratory analyses indicated OCFS/CPS report lower work satisfaction and greater intrusion of work into private life compared to Other. Similar to this study, both job satisfaction and psychological well-being are lower among case workers compared to other occupations with differences by role such that those at a lower role and higher emotional labor have both lower well-being and lower job satisfaction [5,27]. More research is needed to compare different domains of workplace well-being by case worker employment. Further, the pattern for the relationship between caffeine intake and workplace well-being among OCFS/CPS was significantly different compared to other with weak positive correlations between caffeine intake and both work satisfaction and organizational respect for the employee. This is the first study to identify and describe potential relationships between caffeine intake and workplace well-being by case worker role. It may be OCFS/CPS compensation for high emotional labor by consuming caffeine to increase wakefulness and alertness leads to perceptions of improved workplace well-being in these domains. More research is needed to further describe and evaluate any potential relationship between caffeine intake and workplace well-being.

The primary challenge in this preliminary project was recruiting an adequate sample, in terms of size and diversity to compare case workers by role, OCFS/CPS v Other (Table 1). It should be noted, the demographic, primarily white/Caucasian is similar to the national profile [29]. The original primary target sample became unavailable resulting in a lack of any large scale rollout of the survey and limiting snowball sampling effects. Fortunately, despite the use of snowball sampling, respondents gave no indication of all, or a majority, being employed at the same location, institution, or agency limiting the effect of the same workplace generating similar levels of stress between individuals. In addition, the purpose of this cross-sectional study of caffeine intake and workplace well-being among case workers was not to establish a causal relationship between caffeine intake and workplace well-being, but to identify and describe each and any potential relationship between the two. Strengths of the study include the low attrition with only 1/32 respondents failing to complete the entire survey. This may be due to the confidential, online, at your own pace, delivery. Future research should consider similar methods to minimize attrition and site agreements to ensure access to a broad, representative and larger sample.

Conclusion

Taken together and considering the limitations described above, the results of this study support a critical need to address greater caffeine intake among all case workers and lower workplace well-being between and among OCFS/CPS and Other case workers as well as any correlations between the two. A plethora of research exists, and is likely ongoing, evaluating factors and programs related to workplace well-being in this population; however, investigation of the psychoactive drug caffeine has been overlooked. While the results may be due to chance, the large differences when compared to global and national trends should not be ignored. The negative health effects due to emotional labor and excessive caffeine, independently and combined, are well documented and the nearly double rate of intake among this population is concerning. The results of this study strongly support the need for inclusion of caffeine intake in workplace well-being research as well as education for case workers in all settings to address caffeine intake and workplace well-being.

Disclosure Statement

The authors have no conflicts of interest associated with the material presented in this paper.

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