Second Paper: Abstract Title Page

Title: Cumulative risk, teacher well-being and instructional quality: Evidence from the DRC and Ghana

Authors and Affiliations:

Sharon Wolf, Ph.D.
Global TIES (Transforming Intervention Effectiveness at Scale) for Children
Institute for Human Development and Social Change
New York University
246 Greene Street, 416E
New York, NY 10003
sharon.wolf@nyu.edu
212-992-9401

Abstract Body

Background / Context:

There is growing concern that teachers in low-income countries are increasingly de-motivated, which may partially explain deteriorating teaching performance and student learning outcomes, high rates of turnover and absenteeism, and misconduct (Bennell and Akyeampong 2007; Moon 2007). At the same time, remarkably little systematic research has examined the living and working conditions for teachers in sub-Saharan Africa and how such conditions predict teacher well-being and performance. Teachers in low-income countries (LICs) are often ill equipped for the challenges of teaching and face many hardships in their work and personal lives that threaten their well-being and effectiveness in the classroom. Among the many challenges are increasing workloads due to education reform, low and infrequent compensation, lack of professional recognition and development opportunities, lack of accountability, and lack of voice (Bennell and Akyeampong 2007; Guajardo 2011; VSO 2002). Such problems may be particularly acute in conflict-affected countries, where limited resources coupled with historic and/or endemic violence can severely affect teaching conditions.

While some have coined the present state of teachers in LICs as a "motivation crisis" (Moon 2007), more context-specific research is needed to understand how the conditions of teachers' work and personal lives affect their well-being and motivation, and ultimately the quality of their instruction. Basic research on the predictors of teacher well-being and performance is critically needed to improve efforts to support teachers and inform policy decisions about how to most effectively allocate resources. As LICs and CACs work to improve educational quality, addressing the various hardships teachers face could be a critical policy lever. A first step is to better understand the realities of teachers' lives and how they relate to motivation and job well-being, and ultimately the quality of their instruction.

Purpose / Objective / Research Question / Focus of Study:

The present study uses a cumulative risk framework to examine the multiple challenges teachers experience and selected indices of their well-being and teaching quality. The study uses two samples to answer these questions. The first is a representative sample of primary school teachers from the southeastern province of Katanga in the Democratic Republic of the Congo (DRC), and the second is a representative sample of Kindergarten teachers from the Greater Accra Region in Ghana. Analyses examine the various risks teachers face in their lives in and out of work, as well as how these risks accumulate and predict professional well-being and teaching quality. Specifically, this study addresses the following research questions:

1. Is cumulative risk associated with lower teacher motivation and higher burnout and job dissatisfaction in a representative sample of primary school teachers in the Democratic Republic of the Congo and in Ghana?
2. Is cumulative risk associated with lower teaching quality in Ghana?
3. Are particular domains of cumulative risk more or less predictive of teachers' motivation, burnout, job dissatisfaction, and teaching quality? Are work-related risks more predictive than risks in the domains of teachers' personal lives?

Setting:

The DRC, the second largest country in the African continent, has the second lowest human development index in the world and has been afflicted by periods of violent conflict for

the past three decades. Two successive and complex wars ravaged the country between 1996 and 2003, with renewed clashes in 2008 through the present day. In 2010, 1.7 million citizens were displaced, half of which were children (UNHCR 2010). Over the years, due to lack of resources, ongoing conflict and civil war, and large-scale internal displacement of citizens, education has been underfunded and underdeveloped (UNICEF 2013). The combination of dramatically low levels of social and economic development and ongoing political and social instability has ranked the DRC in the bottom ten countries on the Global Peace Index (Institute for Economics and Peace, n.d.). The reverberations of armed conflict affect everyone directly or indirectly, and it is likely that most teachers in the sample were directly affected at one point in their lives. Thus, even in times of relative stability it is difficult to disentangle the lasting consequences of ongoing armed conflict.

Ghana, like many other nations in sub-Saharan Africa, have made marked success in increasing children's access to and enrollment in education. However, while enrollment rates are on the rise, attendance rates suggest that only about 56% of children actually come to school day-to-day (UNICEF, 2013). By the end of primary school, only 52% of Ghanaian schoolchildren meet minimal competency standards in English, and only 56% in math. Notably, only 18 and 33%, relatively, attain proficiency in these areas (Ministry of Education, 2011). As a result, improving the quality of instruction offered is one of the top priorities of the Ministry of Education. Six of the most disadvantaged districts in the Greater Accra Region were selected based on their rating on the 2014 UNICEF District League Table (a social accountability index which ranks regions and districts based on development and delivery of key basic services including education, health, sanitation, and governance among others[1]).

Population / Participants / Subjects:

Both datasets use baseline data from two impact evaluations of teacher development programs. In the **DRC sample,** 456 teachers was randomly selected within primary schools participating in the study, and represented all grades taught (first through sixth). On average, teachers were 37.9 years old and had 12.5 years of teaching experience. The majority of teachers were male (71.7%), and the vast majority (96.6%) had completed at least some secondary school. Teachers spoke a variety of languages as their mother tongue, including Kiswahili (30.3%), Kiswahili and other (18.6%), Kibemba (12.4%), Kisanga (11.7%), Kiluba (6.0%), Tshokwe (4.9%), French (2.0%) and other (14.2%). All teachers in the sample were intended to receive payment for their work, and almost all (97.5%) reported receiving some salary.

In the **Ghana sample**, 480 Kindergarten teachers in the representative sample of schools selected for the study are included. Data is currently being collected and thus descriptive statistics are not yet available.

Intervention / Program / Practice:

Data collected for both samples are part of larger impact evaluations, but all data used in this study come from the baseline data collection. In the **DRC sample,** the intervention evaluated was Learning to Read in a Healing Classroom (LRHC), a curricular and social-emotional teacher professional development intervention developed by the International Rescue Committee. In the **Ghana sample**, the intervention will evaluate the impacts of an 8-day in-service teacher training program focused on incorporating play- and activity-based learning in the classroom.

[1] www.unicef.org/ghana/District_League_Table_report_Edit_NEW_R3.pdf

Research Design:

For the **DRC sample,** data come from a two-year impact evaluation of a teacher development program implemented in three eastern and southeastern provinces of the DRC. School clusters (i.e., geographically-defined groups of 2-6 schools) were the unit of randomization. This paper uses baseline data collected in 2011 in the province of Katanga. 84 schools were randomly selected to participate in data collection from a total of 203 eligible schools grouped in 54 clusters. Eligible primary schools were officially registered government schools, were in a secure zone (e.g., no recent or current movement of armed groups), had at least four classrooms, were located in close proximity to other schools (i.e., within approximately 10 kilometers), were accessible by motorbike, and presumably not receiving similar supports by other education stakeholders. A sample of 456 teachers was randomly selected within primary schools, and represented all grades taught (first through sixth). In **Ghana,** data come from a two-year impact evaluation of an in-service Kindergarten teacher training program implemented in the Greater Accra Region of Ghana. This paper uses baseline data being collected in the fall of 2015 located in 240 schools in six districts within the region. All Kindergarten teachers from selected schools are included in the sample, resulting in approximately 480 teachers.

Data Collection and Analysis:

In the **DRC,** teachers were asked to answer a survey about their educational background, livelihoods, and feelings and perceptions about their job and teaching experiences. Consent was requested from all teachers at the time of data collection and field staff reported a compliance rate of 100%. The maximum time allotted for each interview was 90 minutes. Teacher surveys were conducted in French (the official language of instruction in DRC) by local staff trained in data collection procedures by the research team. In **Ghana**, teachers were asked to answer a similar survey (with many overlapping items). Surveys lasted approximately 60-90 minutes. In addition, video recordings were taken of all teachers in their classroom for 1 hour. See Table 1 for descriptive statistics of the independent and dependent variables in this analysis.

To analyze the data, three-level hierarchical linear models (teachers nested in schools nested in school clusters) were used to estimate the relationship between cumulative risk and teacher's motivation, burnout, and job dissatisfaction in the DRC. One primary model was estimated for each teacher outcome, which assessed the relationship between total cumulative risk and each outcome. In addition, three follow-up analyses were conducted: (a) the cumulative risk index was split into five indices representing specific domains of cumulative risk to assess if any particular domains of cumulative risk were more or less strongly associated with teacher well-being, and interaction terms were included in the primary model to assess moderation of risk and well-being by (b) teacher gender and (c) years of teaching experience. Each model included all covariates. Similar analyses will be conducted with the sample of Ghanaian teachers using two-level hierarchical linear models (teachers nested in schools). In addition, outcomes on teaching quality based on classroom observations will also be assessed.

Findings / Results:

The first column in each panel in Table 2 (i.e., Model 1) shows the relationship between teacher's cumulative risk index score and motivation, burnout, and job dissatisfaction. Results from this model show that there is a statistically significant and negative relationship between

cumulative risk and motivation (b = -.032, p < .001) and a positive relationship with burnout (b = .068, p < .01), but no statistically detectable relationship between cumulative risk and job dissatisfaction. Results indicate that each additional risk is associated with lower teacher motivation and burnout by a magnitude of 5-6% of a standard deviation.

The second column in each panel (i.e., Model 2) separates the cumulative risk index into five separate domains of risk and shows the relationship between these specific domains and teacher outcomes. For motivation, shown in the first panel, results show that only each additional risk in the domain of subjective work conditions was statistically significantly associated with lower teacher motivation (b =-.071, p <.01), and each additional risk in the domain of social isolation was marginally statistically significantly associated with lower teacher motivation (b = -.037, p < .06). While other categories showed a negative association with teacher motivation, no coefficients were statistically significant. For teacher burnout, shown in the second panel, results show that each additional risk in the domain of health and well-being was positively and statistically significantly associated with burnout (b = .258, p < .001), as was each additional risk in the domain of subjective work conditions (b = .112, p < .05). Finally, as with the cumulative risk index, no specific domains of risk were statistically significantly associated with teacher job dissatisfaction.

Analyses will be replicated with the sample of teachers from Ghana, as well as outcomes on teaching quality based on classroom observations.

Conclusions:

While it is well understood that teachers are critical agents of change in improving school quality, few of the current international initiatives formally recognize the importance of improving teaching for achieving universal primary education and learning (Dlada and Moon 2012). There is a need for research to provide the foundation upon which such potential can be realized. This paper presents one of the first studies to empirically assess the relationship between risk factors in teachers' lives – both in and out of work – and three indices of teachers' professional well-being (motivation, burnout and job dissatisfaction), and indices of teacher performance. Analyses on one of the samples find evidence of a small but meaningful linear relationship between higher cumulative risk with lower teacher motivation and higher burnout, but no relationship between cumulative risk and job dissatisfaction. Follow up analyses revealed that higher levels of risk in teachers' subjective perceptions of their work environment were statistically significantly associated with both lower motivation and higher burnout. In addition, higher levels of one domain of personal risk, teachers' health and well-being, was statistically significantly associated only with higher burnout. And surprisingly, higher levels of risk in the domains of household risk, social isolation, and objective work conditions as reported by teachers did not predict teacher motivation, burnout or job dissatisfaction.

The results indicate that the cumulative hardships teachers face in their work and personal lives contribute to the poor motivation and burnout found in other studies (Bennell and Akyeampong 2007; Chaudhury et al. 2006; Moon 2007). It is critical that conditions for teachers, both professionally and personally, are targeted for improvement in order to enhance teachers' capabilities and effectiveness in the classroom. Such research will enable a greater understanding of the mechanisms through which effective programs work, and will help to unpack if and how school-based interventions improve educational quality and student learning. Enhanced knowledge is crucial in order to design the most effective educational programs and policies.

Appendices

Appendix A. References

Bennell, P., & Akyeampong, K. (2007). *Teacher Motivation in Sub-Saharan Africa and South Asia*. London: DfID.

Chaudhury, N., Hammer, J., Kremer, M., Karthik, M., & Rogers, F. H. (2006). Missing in Action: Teacher and Health Worker Absence in Developing Countries. *Journal of Economic Perspectives*. *20,* 91-116.

Dladla, N. and Moon, B. (2012). Teachers and the development agenda: An introduction. In B. Moon (ed.), *Teacher Education and the Challenge of Development: A Global Analysis*. New York: Routledge.

Heflin, C. M., Siefert, K., & Williams, D. R. (2005). Food insufficiency and women's mental health: Findings from a 3-year panel of welfare recipients. *Social Science & Medicine*, *61*, 1971-1982.

Lee, V. E., & Smith, J. B. (1996). Collective responsibility for learning and its effects on gains in achievement for early secondary school students. *American Journal of Education, 104*, 103-147.

Moon, B. (2007). School-based teacher development in Sub-Saharan Africa: building a new research agenda. *The Curriculum Journal*, *18*, 355-371.

Siefert, K., Heflin, C. M., Corcoran, M. E., & Williams, D. R. (2004). Food insufficiency and physical and mental health in a longitudinal survey of welfare recipients. *Journal of Health and Social Behavior*, *45*, 171-186.

United Nations High Commissioner for Refugees, 'Internally Displaced Persons (IDP) – Fact Sheet: Democratic Republic of Congo', UNHCR, Geneva, April 2010, p. 1.

UNICEF (2013). Global initiative for out-of-school children: Democratic Republic of Congo. [http://www.unicef.org/education/files/DRC_OOSCI_Full_Report_%28En%29.pdf]

Appendix B. Tables and Figures

Table 1. Descriptive Statistics and Intercorrelations of Cumulative Risk Indices and Teacher Outcomes

	M	SD	Min	Max	1	2	3	4	5	6	7	8
Cumulative risk indices												
Cumulative risk	8.15	2.58	1.00	18.00	1.00							
Household hardship risk	1.79	0.98	0.00	4.00	**0.50**	1.00						
Health and well-being risk	1.02	0.85	0.00	3.00	**0.47**	**0.19**	1.00					
Social isolation risk	1.84	1.29	0.00	5.00	**0.44**	0.00	0.00	1.00				
Objective work conditions risk	2.60	1.07	0.00	6.00	**0.50**	**0.14**	0.08	**-0.12**	1.00			
Subjective work conditions risk	0.98	1.06	0.00	5.00	**0.46**	-0.01	0.07	-0.06	**0.14**	1.00		
Outcomes												
Motivation	2.49	0.52	0.78	3.00	**-0.20**	-0.06	**-0.14**	**-0.11**	**-0.04**	**-0.15**	1.00	
Burnout	2.76	1.29	0.00	6.00	**0.19**	0.06	**0.19**	0.05	**0.05**	**0.15**	**-0.13**	1.00
Job Dissatisfaction	1.95	1.08	1.00	4.00	0.00	-0.06	-0.04	0.07	-0.05	0.03	**-0.15**	0.04

Note. Correlations that are bold are statistically significant at $p < .05$.

Table 2. Three-level Models of the Relationship between Cumulative Risk and Teacher Motivation, Burnout and Job Dissatisfaction

	Motivation		Burnout		Job Dissatisfaction	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
	b (SE)					
Gender (1 = female)	0.043	0.049	-0.145	-0.169	0.228 *	0.227 *
Grade	-0.007	-0.005	0.038	0.033	0.024	0.023
Kiswahili is mother tongue	-0.016	-0.018	0.037	0.049	0.036	0.044
Age	0.005	0.005	-0.001	0.001	-0.007	-0.008
Parent education	-0.001	0.000	0.085	0.088	0.051	0.046
Years of experience	-0.003	-0.003	0.004	0.002	-0.002	-0.003
Cumulative risk	-0.032 ***		0.068 **		0.021	
Household hardship risk		-0.027		0.022		0.003
Health and well-being risk		-0.038		0.258 ***		-0.031
Social isolation risk		-0.037 †		0.046		0.061
Objective work conditions risk		0.007		-0.006		-0.010
Subjective work conditions risk		-0.071 **		0.112 *		0.061
Variance components						
Teacher	0.199	0.198	1.301	1.250	0.852	0.851
School	0.014	0.012	0.125	0.147	0.236	0.228
Cluster	0.025	0.024	0.000	0.000	0.000	0.000
Sample size (total = 456)	448	448	449	449	445	445