



Zoom-based GROW coaching intervention for improving subjective well-being in a sample of school administrators: A randomized control trial

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ABSTRACT

Background/objective: Poor subjective well-being is a risk factor for poor health; and threatens school administrators' leadership roles and overall occupational and personal outcomes. Online digital care and coaching such as Zoom-delivered GROW (Z-GROW) coaching may be an invaluable approach to building resilience and improving well-being. This study investigated the effectiveness of the Z-GROW coaching model in enhancing self-reported well-being in a sample of school administrators in South-East Nigeria.

Method: A randomized control trial was conducted with a sample of 109 school administrators who met the inclusion criteria. Participants were allocated into Z-GROW ($N = 55$) and waitlist control ($N = 54$) groups. A 2-hour Z-GROW programme was delivered to the Z-GROW intervention group weekly for 9 weeks. Subjective well-being was measured using the Satisfaction with Life Scale (SWLS), the Scale of Positive and Negative Experience (SPANE), and the Flourishing Scale (FS). Data were collected on three occasions: pre-intervention, post-intervention, and follow-up using the same measures. All data were analyzed using descriptive and inferential statistics. The presentation of data was supported by figures and charts.

Results: Results revealed that school administrators' three dimensions of subjective well-being significantly improved following the Z-GROW intervention. It was further shown that the improved state of participants was sustained through a 3-month follow-up assessment.

Conclusion: Based on the findings, it can be concluded that intervention using GROW coaching in the zoom platform improves the self-reported well-being of school administrators. The outcomes of this study present the Z-GROW model as a viable intervention for subjective well-being and other mental health conditions among school administrators. Through the Z-GROW model, employees can access occupational health coaching from the comfort of their homes.

1. Introduction

There is an increasing level of work demands that threaten workers' well-being, human function, and managerial outcomes across organizational settings (Ingusci et al., 2021; International Labour Office, 2010; Nielsen et al., 2017), including school settings. The supervision of teachers and students may add to the administrative workload of school administrators. In addition to maintaining a collaborative relationship between the school and the community, school administrators are responsible for school budgeting, curriculum planning, record keeping, developing and enforcing rules and regulations, as well as staff development (Ayeni, 2012; Beausaert et al., 2021). Hence, the work of school administrators is multifaceted and can be health-threatening, especially when school systems are constrained by ecological factors associated with schools in developing countries.

Developing countries like Nigeria are confronted with challenges

such as poor working conditions, aversive work pressure, and lack of government attention (Beausaert et al., 2021), which collectively threaten the health and well-being of workers. Additionally, the effects of family workload, role conflicts, insecurity, and possible job dissatisfaction are generally associated with lower subjective well-being among administrators (Beausaert et al., 2021; Xian et al., 2011; Walker, 2019). The plight of school administrators has been further complicated by the impact of the COVID-19 pandemic on the overall well-being of the human population, causing distress and mental health issues in schools (Brog et al., 2021; Panchal et al., 2020). Additionally, public school administrators are mostly challenged by the current emerging school operation frameworks embedded in the present e-communication and internet-based job activities which are new to most public school administrators in Nigeria (Alawamleh et al., 2020; Ghavifekr et al., 2014). Most school administrators may find such conditions overwhelming, which might devalue their subjective well-being (SWB) (Agu et al.,

Abbreviations: GROW, Goal setting, Reality, Option, and Will; Z-GROW, Zoom-based GROW; SWB, subjective well-being; SWLS, Satisfaction with life scale; SPANE, Scale of positive and negative affect; FS, flourishing scale; WL, waitlist; SD, standard deviation; p , p -value.

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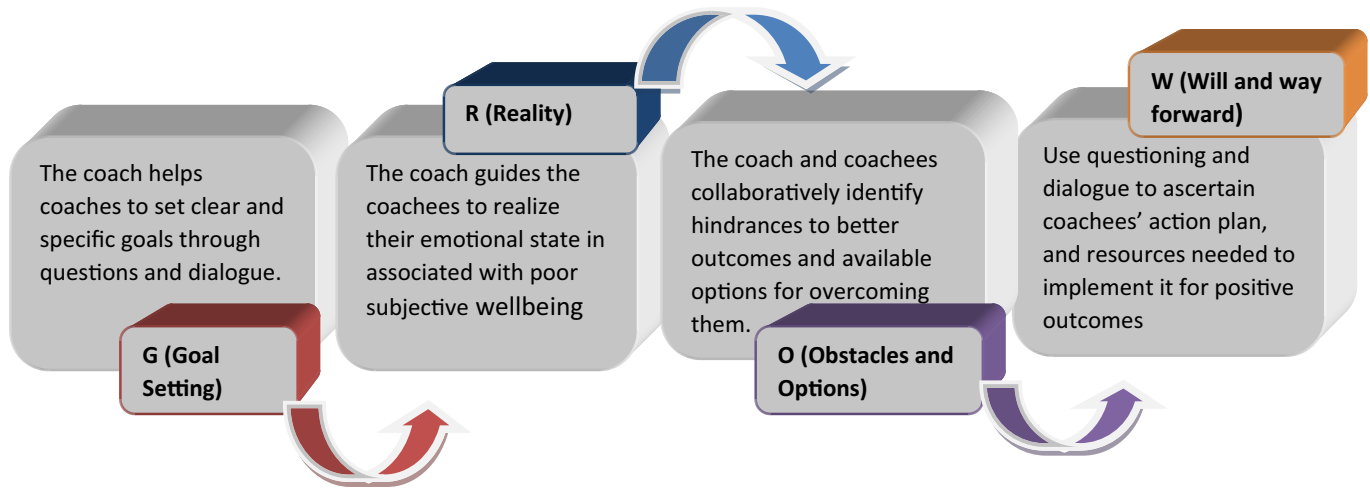


Fig. 1. GROW Model for Subjective well-being.

2021; Ilie and Bondrea, 2016). COVID-19 has also increased the usage of e-platforms by school administrators and a majority of them are dealing with the situation in such a way that it affects their perceived health conditions or Social Work Behaviour (Carnevale and Hatak, 2020a, 2020b; Ilie and Bondrea, 2016). Hence, most school administrators show undermined mental and physical health and require improved subjective well-being for maximum school functioning (Oyelami, 2018; Rahm and Heise, 2019).

In the main, subjective well-being (SWB) is the perception of life as it pertains to life satisfaction, affects balance, and flourishing (Tay and Kuykendall, 2013). According to Seligman (2011) and Kern et al. (2015), subjective well-being is a multifaceted construct, consisting of positive emotions, engagement, positive relationships, meaning, and accomplishments. It has been shown that reduced SWB can affect an administrator's physical health, physiological performance, creativity, and problem-solving skills, which might lead to problematic psychological states, including stress disorders and low levels of work engagement (Eryilmaz and Sapsaglam, 2018; Diener and Chan, 2011). In addition to job-related health issues and negative affects, school administrators' poor SWB is associated with social problems among teachers and students (Kern et al., 2015; Riley, 2015). Thus, school administrators' SWB is paramount for overall school academic and health outcomes. However, in spite of its impacts on the overall performance of the school (teachers, students, learning activities and the administrators themselves), SWB among school administrators has received less attention from researchers, policymakers and organizations (Beausaert et al., 2021; Sahlberg, 2015).

Most school interventions for mental health focus on the teachers (Leung et al., 2010) and the students (Haugland et al., 2017). The school administrators, who are mostly saddled with the responsibility of maintaining a healthy school environment and leadership roles, are involved in promoting good school health through assisting teachers and students (Webster et al., 2020). Yet their own health conditions are often ignored, thus increasing their vulnerability. To date, intervention research targeting the school administrators' well-being is scarce in the literature (Webster et al., 2020). The few intervention studies that involve coaching tend to focus on the quality of work-life balance (Agu et al., 2021) and stress management (Ogba et al., 2020) among school administrators. No known study has offered intervention for the SWB of the school administrators. Hence, the present study aimed at improving school administrators' SWB through a Zoom delivered GROW coaching programme.

Although coaching has been shown to reduce behavioural problems among employees, including school administrators (Hardy and Bakhshaei, 2021; Rosse-Richards et al., 2013), COVID-19 and associated

disruptions have necessitated the transition to online psychotherapy and teletherapy for mental health interventions (Martins et al., 2021). Online coaching has been shown to improve health and professional outcomes, especially among school administrators (Brandmo et al., 2021; Gayed et al., 2019; Jones and Ringler, 2020). In light of the increasing acceptance of remote coaching for organizational leaders, there is therefore the need to explore the Zoom platform in coaching for school administrators.

In this sense, we propose that zoom-delivered GROW (Z-GROW) coaching can be used to improve school administrators' SWB for better performance (Carvalho et al., 2018; de Haan and Kasozi, 2015; Williams et al., 2008). The GROW model (Williams et al., 2008; Williams et al., 2010) focuses on helping workers build protective resources and resilience to work demands. GROW consists of teaching participants to challenge maladaptive cognitions (Bishop, 2015; Holman et al., 2018) by identifying the events which lead to negative feelings, thoughts, and behaviours, and systematically challenging such views to produce more helpful realities. The GROW model has been used in organizational coaching (Carvalho et al., 2018; de Haan and Kasozi, 2015; Williams et al., 2008), and could be useful in raising administrators' SWB. See Fig. 1 for a full description of the model.

In the G (goal setting) phase, the coach helps the coachee set specific, measurable, and achievable relevant and time-bound (SMART) goal. The second phase is the identification of R (Reality) which continuously puts the coachee in a negative emotional state and lowers their overall well-being (Whitmore, 1996, 2004). Once R is identified, the coach and the coachee can discuss O (OPTIONS) and alternative strategies or actions that can lead to better results (Whitmore, 1996, 2004). The Option phase is about weighing the various options available to the current situation (de Haan and Kasozi, 2015). Finally, the W (will or way forward) requires identifying WHAT is to be done, WHEN, WHO, and WHY (Edgerton and Palmer, 2005). This trajectory leads to a well-planned strategy that motivates coachees to take action (Leedham and Parsloe, 2017).

Coaching remotely in the Z-GROW intervention could be of great promise as the administration of remote interventions has consistently shown to be effective for treating a variety of physical and mental conditions (Flori et al., 2021; Karyotaki et al., 2021; Scheerman et al., 2020). Due to the wide use of Zoom for formal meetings in remote parts of Nigeria, the GROW (Z-GROW) intervention was delivered via Zoom.

Zoom is a secure and private online videoconferencing platform that can be used in place of physical meetings for one-on-one or group interaction (McBeath et al., 2020a). Zoom may be more widely accepted for a range of interventions because it is cost-efficient, provides unlimited video communication systems, is compatible with a broad range of

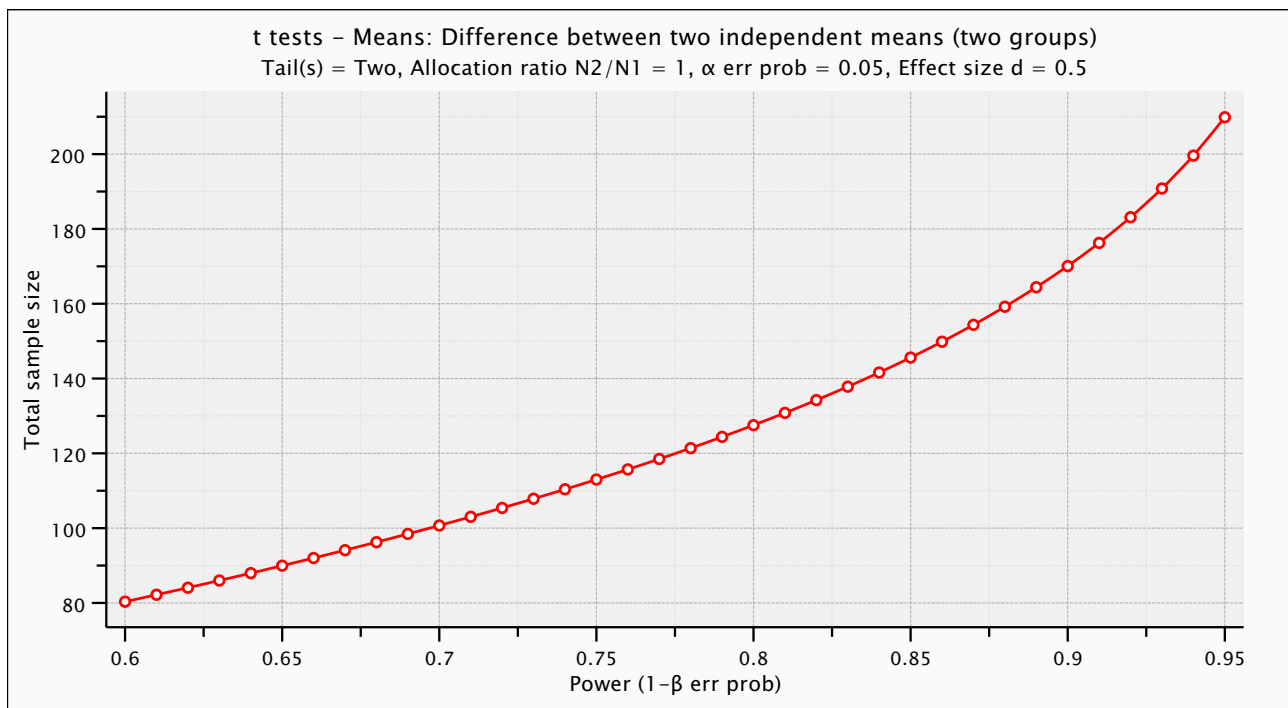


Fig. 2. Line graph showing sample size estimation using power analysis α err prob. = Alpha Error Probability, β err prob. = Beta Error Probability, d = effect size, N_1 = number of participants in group 1, N_2 = number of participants in group 2.

devices and operating systems, and provides excellent audio and video quality (McBeath et al., 2020b; Simpson et al., 2021). Given these features, Zoom-based coaching would enable clients to engage more deeply with their coaches, and develop close coaching relationships (Simpson et al., 2021). The combined benefits of Zoom-based therapy (Torous et al., 2020; Wind et al., 2020) make it an attractive alternative to face-to-face therapy (Datta et al., 2020; Hasegawa et al., 2020; Newell, 2021).

Nevertheless, there is a near-complete lack of data from trials on the efficacy of GROW coaching delivered through Zoom (Z-GROW) in ensuring the well-being of school leaders. In this randomized control trial, we attempted to fill the gap by implementing a Zoom-delivered GROW model in raising subjective well-being among school administrators in Nigeria. We thought that a 9-week Z-GROW coaching intervention programme would lead to a sustained improvement in school administrators' subjective well-being. We, therefore, hypothesized that: i) the subjective well-being of the school administrators who participate in Z-GROW intervention will improve significantly over those who are waitlisted, and ii) the improved SWB of the Z-GROW group would be sustained through a three-month follow-up.

2. Methods

2.1. Study design

A pragmatic randomized, wait-list-control trial with pretest, posttest, and follow-up assessments has been used as in some earlier internet-based studies (Desveaux et al., 2016; Richards et al., 2020). Trial procedures are built around standard procedures, while support is delayed for the waitlist group until after the active intervention of the experimental group (Dike et al., 2021). Participants were randomized into Z-GROW and Waitlist groups. Sequence allocation software was used for the allocation of the participants into groups (participants were asked to pick 1 envelope containing pressure-sensitive paper labelled with either Z-GROW or WL-Control Group from a container). Randomization information was concealed from the participants until the assignment of

the intervention. The study was conducted on the Zoom platform, which allowed participants to take part in the intervention from wherever they were. Sessions and interactions were also conducted online via the Zoom platform.

2.2. Ethical consideration

The Faculty of Educational research ethics of the host university approved our study. In addition, the study followed the research ethical standards of the American Psychological Association (2017) and the World Medical Association (2014). As part of the inclusion procedure, all study participants provided written consent. The AEARCTR-0005532 identifies this study as part of a retrospectively registered project with the AEA RCT Trial Registry.

2.3. Measures

2.3.1. Demographic questionnaire

This questionnaire was used to source information about the participants' demographics. The participants were expected to identify their gender and their specific positions in the school administration hierarchy.

2.3.2. Satisfaction with life scale (SWLS)

The cognitive dimension of SWB is measured with SWLS developed by Diener et al. (1985). This study used a five-point Likert scale to answer five items, where 1 = strongly disagree and 5 = strongly agree. The possible scores range from 5 (lowest) to 25 (highest). A higher score indicates greater life satisfaction. Several studies have shown that SWLS is reliable in measuring satisfaction with life in diverse populations (Arrindell et al., 1991; Barki et al., 2020; DirzYTE et al., 2021). Therefore, the adapted SWLS scale was tested on 57 school workers and was found to be reliable in the Cronbach's Alpha test ($\alpha = 0.79$).

2.3.3. The scale of positive and negative experience (SPANE)

SPANE is a self-report measure of the affective dimension of SWB. The test consists of 12 adjectives, including six (6) items to assess happy

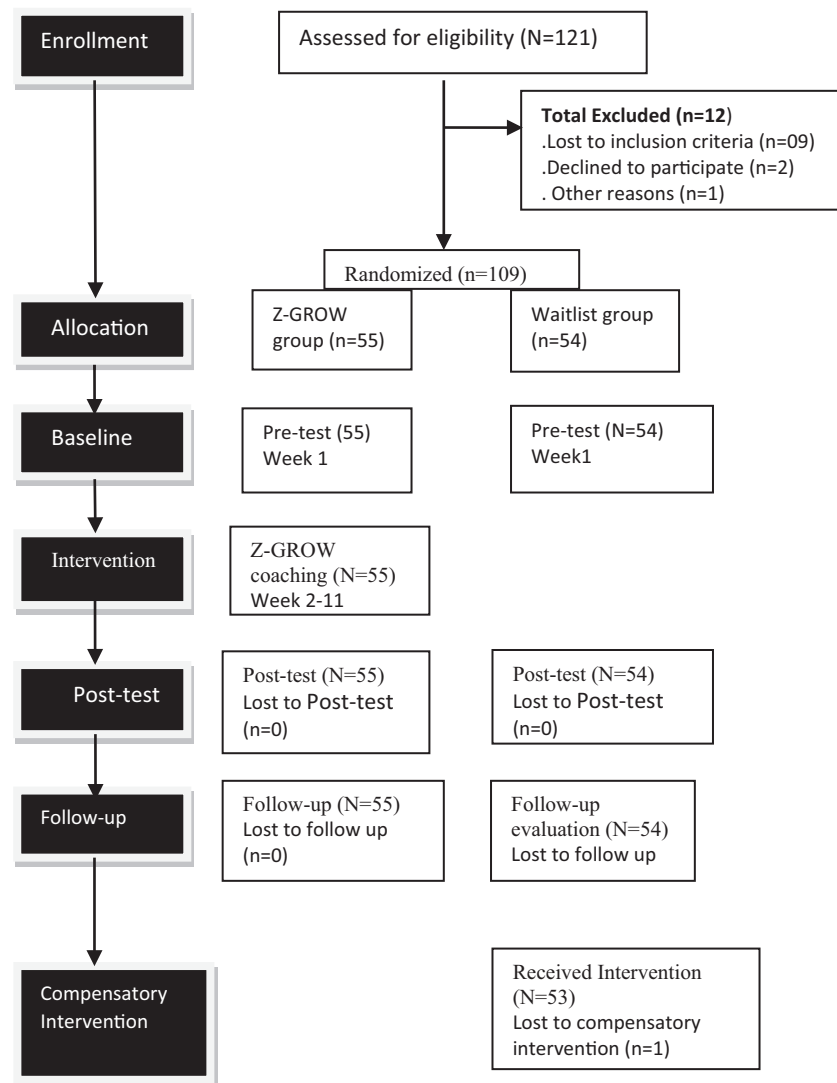


Fig. 3. Design/Participants' Flow chart.

feelings and six (6) items to assess negative feelings. Three scores are derived from the SPANE: positive sentiments (SPANE-P), negative thoughts (SPANE-N), and affect balance (SPANE-B). The highest score is 30, while the lowest score is 6 each for positive feelings (SPANE-P) and negative thoughts (SPANE-N). When the SPANE-N score is subtracted from the SPANE-P score, a balanced score (SPANE-B) is derived. The possible scores in SPANE-B range from -24 to 24 . According to Diener et al. (2010), respondents with a higher total balance score are more likely to report feeling happy. SPANE is a reliable instrument (Martín-Carbonell et al., 2021) that has been used in earlier research. After being tested with Cronbach's Alpha statistics, the instrument was found to be reliable ($\alpha = 0.83$) with 57 school workers.

2.3.4. The flourishing scale (FS)

It measures self-perceived success in relationships, self-esteem, purpose, and optimism (Diener et al., 2010). FS consists of eight (8) short statements rated from 1 to 5, with 1 indicating strong disagreement and 5 indicating strong agreement. The maximum rating is 40 and the lowest is 8, with higher ratings representing respondents' high psychological resources and skills (Diener et al., 2009). The instrument has been extensively used to assess psychological well-being in a wide range of interventional and non-clinical studies. For instance, it has been shown to be reliable in the Spanish population (De la Fuente et al., 2017), as well as in New Zealand (Hone et al., 2014). Using Cronbach's alpha

statistics, FS was also tested for reliability in the Nigeria context and was also found reliable ($\alpha = 0.87$).

2.4. Participants and recruitment procedures

The study sample consisted of 109 school administrators from public secondary schools in Enugu State, Nigeria, composed of 49 males and 60 females. G-Power software, version 3.1 (Faul et al., 2007) was used to calculate the sample size through a priori power analysis. With an alpha value of 0.05 and power of 0.80, the effect size of the estimated sample size was 0.5. Accordingly, the expected sample size was approximately 128 (64 each for Z-GROW and Control groups) for the between-group comparison (see Fig. 2). After recruitment, the sample size ($n = 109$) ascertained based on inclusion/exclusion criteria was calculated using a sensitivity test (Faul et al., 2007), and it indicated a medium effect size ($d = 0.54$), showing that the sample size was adequate.

Invitation to screening and recruitment was sent via e-mails and text messages to all school heads in secondary schools in the study area. Additionally, details of the intervention were shared on WhatsApp platforms of school heads where the purpose, description and benefits of the intervention to the participants were clearly stated. A total of 121 potential volunteers indicated interest to be included in the programme, all of whom volunteered for the study after being notified and invited. Based on the inclusion criteria established by the researchers, potential

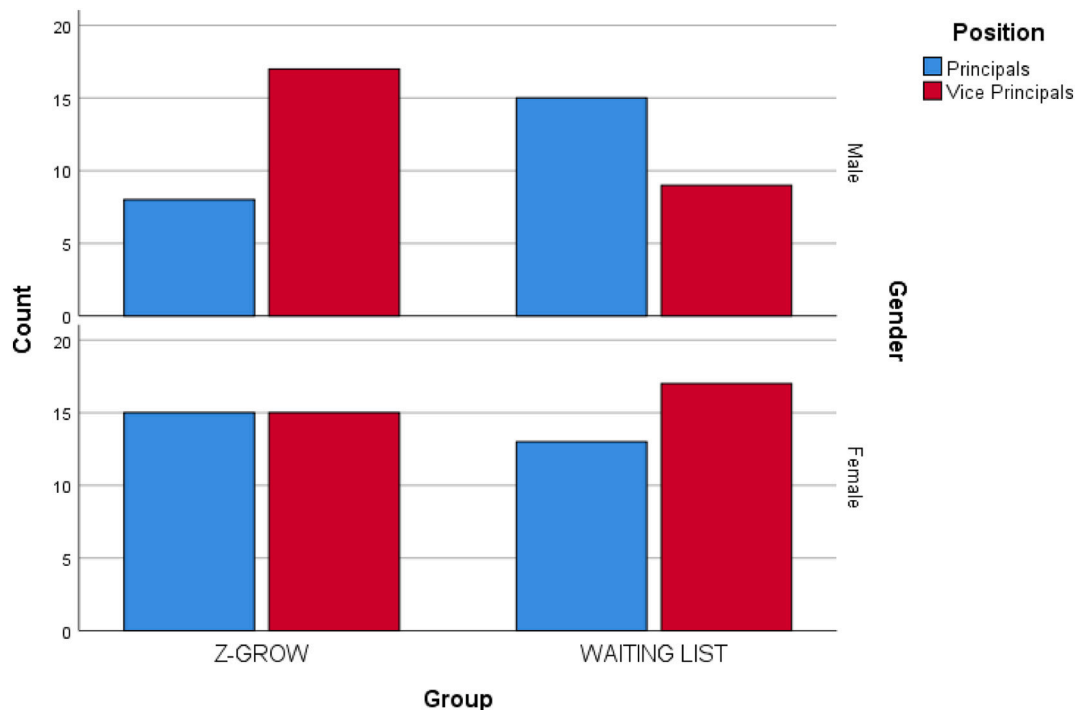


Fig. 4. Distribution of the participants in the Z-GROW and WL groups according to gender.

participants were evaluated for eligibility. Specifically, the eligibility criteria are i) absence of chronic illnesses such as diabetes, ii) not being on any pharmacological therapy during the study period, iii) willingness to share personal information, iv) participants signing a written consent of availability throughout the study period, and v) possession of digital devices such as smartphones, tablets, or computers, and internet access. There were 12 potential participants who were excluded from taking part in the study because they did not meet the set criteria.

A total of 54 participants were randomized into the Z-GROW group, and 54 participants were in the Waitlist group (see Fig. 3). Thereafter, pretest data were collected from both the Z-GROW group and the Waitlist group (WLG). Then, the Z-GROW group received a 2-hour-weekly Z-GROW intervention for 9 weeks (See intervention sessions). Each of these sessions was followed by a practice exercise. Two weeks after the completion of intervention sessions, posttest (time 2) data were collected from both Z-GROW and WLG using the measures of SWB. Afterwards, a 3-month follow-up meeting was held where follow-up (Time 3) data were collected. Data at pretest, posttest, and follow-up evaluations were collected online by sharing the questionnaire documents on Zoom during data collection meetings. In this regard, participants were instructed to download the questionnaire, complete it within 30 min and send it back on the spot via email. All the participants completed and submitted their questionnaires at the speculated time during the pretest, posttest and follow-up evaluations. Then, after the follow-up assessment, zoom-based Z-GROW intervention was administered to the WLG for a period of 9 weeks. All Z-GROW sessions were facilitated by two of the researchers in collaboration with four research assistants (experts in technology and coaching).

Fig. 4 shows the distribution of the participants in the Z-GROW and WL groups. A total of 8 male principals were in the Z-GROW group, while 15 were in WL. Also, 17 male vice-principals were in the Z-GROW group, while 9 were in WL (see Fig. 4). On the other hand, 15 female principals are in the Z-GROW, while 13 female principals are in the WL group. Lastly, 15 female vice-principals were in the Z-GROW group, while 17 vice-principals were in the WL group (see Figs. 3 and 4).

2.5. Intervention

A Zoom-based GROW (Z-GROW) manual developed by the researchers was used during the intervention. During the development, earlier studies on GROW model, and the use of Zoom as a digital therapy platform were reviewed (Brown and Grant, 2010; Grant, 2011a, 2011b, 2013; Kamarudin et al., 2020). The Z-GROW manual aimed at changing the irrational beliefs that indirectly weigh down school administrators' subjective well-being. The manual was designed to last for 9 weeks, with one 120-minute session a week.

The coaches strictly followed the GROW model (Goal, Reality, Options, and Wrap-up) (Grant, 2011a, 2011b, 2013) for the intervention sessions. The coaches led the participants to observe themselves through GROW-M by identifying and explaining their occupational stressors taking them through G-R-O-W and the accompanying questions (see Table 1). The 9-week intervention was administered in three phases: the initial phase, the intervention phase, and the parcel-up phase.

2.6. Data analyses

For data analysis, we used a pretest-posttest randomized waitlist control trial design (Desveaux et al., 2016). We used an independent sample *t*-test with bootstrap at a 95% confidence interval to examine baseline data. To compare baseline, posttest, and follow-up data, a 2-way analysis of variance (ANOVA) with repeated measures was used. The effect size of the intervention was calculated using partial Eta squares, which were converted to Cohen's *d*. Cohen's *d* (*d*) is the measure of effect size (Lakens, 2013), which specifically measures the difference between two means. Thus, the effect sizes were determined using limit number ($d = 0.2$), medium ($d = 0.5$), and large ($d = 0.8$). Paired sample *t*-test was used to assess the change in participants' dimensions of SWB across pre-post, posttest and follow-up evaluations. Charts were also used to demonstrate results. Statistical Package for Social Sciences (SPSS) version 24.0 was used for analyses. All results were presented in tables and charts.

Table 1
Summary of GROW intervention manual.

Acronym	Description of activities	Guiding questions for dialogue
G-Goal	<p>Identify behaviour or emotion to be change and structure it as the goal they want to achieve. SMART goals (specific, measurable, achievable, realistic, and time-bound) were set at the beginning of each session.</p> <p>The coach guides the coachees to consider and clarifies the type of goal through an understanding of ultimate goals, performance goals and progress goals along the way.</p> <p>Coachees are guided to understand the principal aims and aspirations regarding the intervention such as improving well-being.</p> <p>Clarify the desired result from the session.</p>	<p>What do you want? What is the aim for this discussion? How would you like it to be? What does that look like? What will you have that you don't have now? Imagine 3 months from now, all obstacles are removed and you have achieved this: What do you see/hear/feel? What new elements are in place? What is different?</p>
R-Reality	<p>In considering the reality, the coaches are lead to identify the current situation in the form of their starting point. In this section, the symptoms/ dimensions of burnout were used in each session.</p> <p>The coach assesses the coachees' current situation as the action taken so far.</p> <p>Clarifies the results and effects of previously taken actions. Provides understanding of internal obstacles and blocks currently preventing or limiting progression.</p>	<p>What is happening now (what, who, when, and how often)? What is the effect or result of this? Have you already taken any steps towards your goal? Does this goal conflict with any other goals or objectives?</p>
O-Options	<p>In exploring the options of what is possible, all the possible options for reaching these objective are considered and compared.</p> <p>Help them brainstorm as many good options as possible. Then, discuss these and help them decide on the best ones. Offer your own suggestions in this step, but let your team member offer suggestions first and let them do most of the talking. It's important to guide them in the right direction without actually making decisions for them. Identifies the possibilities and alternatives. Outlines and questions a variety of strategies for progression.</p>	<p>What else could you do? What if this or that constraint were removed? Would that change things? What are the advantages and disadvantages of each option? What factors or considerations will you use to weigh the options? What do you need to stop doing in order to achieve this goal? What obstacles stand in your way?</p>
W-Will/ wrap-up	<p>In establishing the Will, the team member are guided to develop a good understanding of how to achieve their goals, and to execute specific actions to move forward towards their goal. They are also guided to develop motivation to deal with the self and the situation.</p> <p>Provide understanding of what has been learned and what can be changed to achieve the initial</p>	<p>What will you do now, and when and how? What else will you do? What could hinder you from moving forward? How will you overcome this? How can you keep yourself motivated? When do you need to review progress? Daily, weekly, monthly?</p>

Table 1 (continued)

Acronym	Description of activities	Guiding questions for dialogue
	<p>goals. Creates a summary and plan of action for implementation of the identified steps. Outlines possible future obstacles. Considers the continued achievement of the goals, and the support and development that may be required. Estimates the certainty of commitment to the agreed actions.</p>	
Monitoring Progress	<p>This is for accountability and allows the coach and the coachee to strategically review the original plan, with the intention of identifying strategies that are working or not working.</p> <p>At the beginning of each session, the coach guides the coached to strengthen effective strategies and change ones that are not working.</p>	<p>What was your experience during the week? what strategies did you implement? Which strategies worked and which did not work? What changes can be made?</p>

3. Results

Participants' demographic information data in the Z-GROW model and waitlist control groups were analyzed based on the mean age and distribution. Accordingly, the mean age of the participants was 43.66. A total of 55 (50.5%) participants were in the Z-GROW, while 54 (49.5%) were in the WL group. Regarding the participants' gender, 49 (45%) of the participants were males, while 60 (55%) were females. With regard to the participants' administrative positions, 51 (46.8%) were principals, while 58 (53.2%) were vice-principals.

Data in Table 2 show low baseline satisfaction with life scale (SWL). There was a non-significant difference between the Z-GROW and WL groups [mean difference = -0.06; df (1, 107) = 0; p = 94; d = 0.00]. Both groups also had non-significantly different low mean scores in the scale of positive affect (SPANE-P) [mean difference = -0.07; df (1, 107) = 0.00; p = 95; d = 0.00], and anon-significant high negative affect demonstrated by participants in Z-GROW and WL groups [mean difference = -0.26; df (1, 107) = 0.19; p = 65; d = 0.002]. Hence the baseline Affect Balance (SPANE-B) of the Z-GROW and the WL groups were poor and not significantly different [mean difference = 0.18; df (1, 107) = 0.02; p = 88; d = 0.000]. Further, data from Table 2 indicate a non-significant low rating of the flourishing scale as rated by participants in Z-GROW and WL groups [mean difference = 0.09; df (1, 107) = 0.01; p = 65; d = 0.002]. These outcomes indicated that the SWB of the participants in both groups were poor before the Z-GROW programme.

The posttest data in Table 2 further show improved subjective well-being among the participants in the Z-GROW group over the WL group as indicated by improved scores in all the dimensions of the SWB scales. In SWL, there was an increased mean score of the Z-GROW group compared to the WL group, leading to a significant difference in the SWL between them and the groups [mean difference = 6.20; df (1, 107) = 58.46; p = .000; d = 0.45], with moderate effect size. There was a significant difference in the mean scores on the scale of positive affect (SPANE-P) [mean difference = 9.66; df (1, 107) = 52.81; p = .000; d = 0.63] due to the increased rating of participants in Z-GROW over the WL. The relatively large effect size (0.63) further showed a high positive impact of the Z-GROW on the participants' subjective well-being. Participants in the Z-GROW had a reduction on their SPANE-N unlike those in the WL groups, resulting in a significantly different rating between the two groups [mean difference = -9.82; df (1, 107) = 159.80; p = 000; d = 0.69].

Table 2
Repeated measures ANOVA for pre-test, post-test and follow-up evaluation.

Group	Pre-test (Time 1)					Post-test (Time 2)					Follow-up (Time 3)				
	SWLS1	SPANEP1	SPANEN1	SPANEB1	FS1	SWB2	SPANEP2	SPANEN2	SPANEB2	FS2	SWB3	SPANEP3	SPANEN3	SPANEB3	FS3
Z-GROW	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
Mean	10.38	14.27	21.10	-6.83	15.94	17.12	24.02	11.45	9.56	28.56	17.60	21.15	10.67	10.47	28.29
Std. Deviation	4.73	5.93	3.27	6.35	6.22	3.16	3.28	5.04	5.62	3.08	3.25	3.76	3.97	5.25	4.62
N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Mean	10.44	14.35	21.37	-7.01	15.85	10.92	14.35	21.27	-6.92	15.14	10.95	14.64	21.42	-11.77	17.20
Std. Deviation	5.01	5.94	2.85	6.54	6.24	5.09	5.94	2.71	4.84	5.98	3.34	4.25	2.93	5.94	3.59
Mean difference	-0.06	-0.07	-0.26	0.18	0.09	6.20	9.66	-9.82	16.48	13.41	9.04	11.49	10.75	22.25	8.08
Df	1, 107	1, 107	1, 107	1, 107	1, 107	1, 107	1, 107	1, 107	1, 107	1, 107	1, 107	1, 107	1, 107	1, 107	1, 107
F	0.00	0.00	0.19	0.02	01	58.46	52.81	159.80	268.43	157.36	205.15	223.39	257.87	428.69	103.51
P	0.947	0.955	0.658	0.883	0.938	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
d	0.000	0.000	0.002	0.000	0.000	0.45	0.63	0.69	0.71	0.69	0.75	0.67	0.70	0.80	0.59

Df = Degree of Freedom, F = Analysis of variance; t-test statistic, p = probability value and d = effect size.

Hence, [Table 2](#) further showed that the SPANE-B of the participants in the Z-GROW group improved significantly over those in the WL group at the posttest [mean difference = 16.48; df (1, 107) = 268.43; $p = 0.00$; $d = 0.71$]. Further, data from [Table 2](#) indicate a significant difference in the participants' rating of the flourishing scale during the posttest, with the Z-GROW group presenting an improved flourishing rating compared to the WL groups [mean difference = 13.41; df (1, 107) = 157.36; $p = 0.00$; $d = 0.69$]. These scores indicate that the participants in the Z-GROW sub-sample improved significantly in their SWB over those in the WL group.

The follow-up results in [Table 2](#) also show that there were significant main effects of Z-GROW on all subscales of subjective well-being at follow-up evaluation. Participants in the Z-GROW group has increased rating on the SWL scale compared to the control group, recording a statistically significant difference in the SWL of both group in favour of the Z-GROW group [mean difference = 10.04; df (1, 107) = 205.15; $p = 0.00$; $d = 0.75$]. The high effect size (0.75) also strengthens the finding based on the efficacy of the Z-GROW model. The Z-GROW group rated significantly higher in the subscale of SPANE-P compared to the WL group at follow-up [mean difference = 11.49; df (1, 107) = 223.39; $p = 0.00$; $d = 0.67$], indicating that the Z-GROW model increased participants' positive affect. The effect size is high (0.67), showing high efficacy. The high effect size (0.75) also strengthens the finding based on the efficacy of the Z-GROW model. On the other hand, the Z-GROW group rated significantly lower in the subscale of SPANE-N compared to the WL group at follow-up [mean difference = 10.75; df (1, 107) = 257.87; $p = 0.00$; $d = 0.70$], indicating that the Z-GROW model decreased participants' negative affect. The effect size is high (0.70), showing the high efficacy of the Z-GROW model. Additionally, the Z-GROW group rated significantly higher in their SPANE-B compared to the WL group at follow-up [mean difference = 22.25; df (1, 107) = 428.69; $p = 0.00$; $d = 0.80$]. Flourishing scale was also significantly higher in the Z-GROW group compared to the WL [mean difference = 8.08; df (1, 107) = 103.51; $p = 0.00$; $d = 0.59$]. In summary, the outcomes of the follow-up evaluation indicate that the improvement in SWB following the Z-GROW model programme was sustained.

The analyses of the interaction effect of intervention and time of evaluation show that the SWL of participants in the Z-GROW group changed significantly from pretest to posttest ($t = -9.33$; $p = 0.00$), but not significantly from posttest to follow-up (-0.93 ; $p = 0.647$) (see [Fig. 5](#)). A similar result was found with regard to SPANE-P ($t = -8.13$; $p = 0.00$) for the pretest to the posttest, and ($t = -0.22$; $p = .751$) for posttest to follow-up results.

Further results show that the participants' SPANE-N scores also changed significantly from pretest to posttest ($t = 11.39$; $p = 0.00$), but not significantly from posttest to follow-up test (-0.34 ; $p = .327$) in the Z-GROW group. A similar result was found with regard to SPANE-P, in which a significant difference exists between pretest and posttest results ($t = -8.13$; $p = 0.00$), but not between posttest and follow-up results ($t = -0.22$; $p = .352$). SPANE-B changed between pretest to posttest ($t = -29.58$; $p = 0.00$), but not from posttest to follow-up ($t = 0.83$; $p = .613$) (see [Fig. 6](#)). The FS also changed between pretest and posttest ($t = -12.93$; $p = 0.00$), but not from posttest to follow-up ($t = 0.42$; $p = .675$) in the Z-GROW group (see [Fig. 7](#)).

On the contrary, the WL group's scores did not have significant changes across Time 1-2 and Time 2-3 in all dimensions of SWB (see [Figs. 5-7](#)). These results show that the subjective well-being of the participants in the WL group was low and stable over the period of investigation. These outcomes suggest that the changes in the subjective well-being dimensions in the Z-GROW group were due to the Z-GROW programme, and not due to differences in time of evaluation.

4. Discussion

This study examined the effectiveness of the Z-GROW intervention model in enhancing school administrators' subjective well-being in

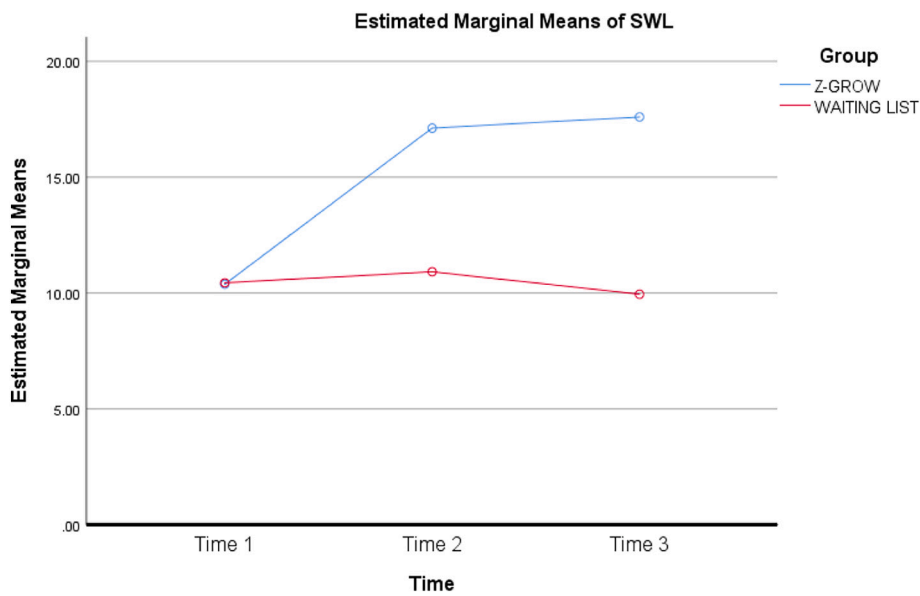


Fig. 5. Interaction Effect of Intervention and Time of Evaluation on Participants' scores on Satisfaction with Life. Time 1 = pretest; Time 2 = posttest; Time 3 = follow-up test; Z-GROW = Zoom delivered GROW model group.

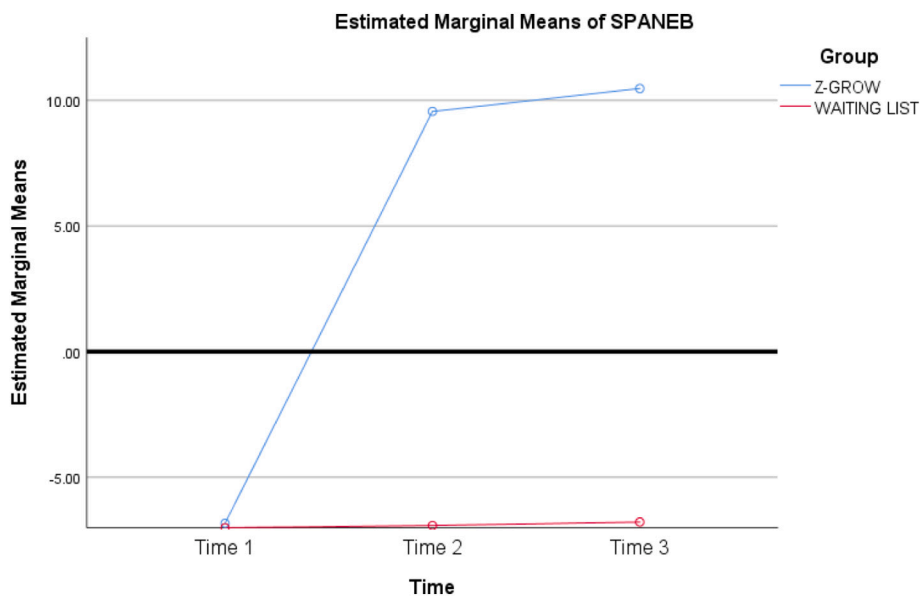


Fig. 6. Interaction Effect of Intervention and Time of Evaluation on Participants' scores on Affect Balance. Time 1 = pretest; Time 2 = posttest; Time 3 = follow-up test; Z-GROW = Zoom delivered GROW model group.

Nigeria. There were also non-significant differences in all the subscales of SWB, including satisfaction with life, a measure of affects/happiness, and flourishing. At posttest, Z-GROW intervention led to a significant improvement in all the dimensions of subjective well-being, and the recorded improvements were sustained through a 3-month follow-up. The results further demonstrated that the decrease in subjective well-being across time was strictly due to Z-GROW mediation and not due to changes in time of evaluation.

The finding of this study regarding the effectiveness of Z-GROW intervention on school administrators' SWB provides a foundation for further studies as the present study is a pioneer in this strand of investigation. Although no randomized control trial study has investigated the efficacy of Z-GROW on subjective well-being, the GROW model has been used in face-to-face organizational coaching and intervention, and found to be effective (Mukherjee, 2014a, 2014b). The GROW framework

assists employees in goal setting, problem-solving, preserving personal achievement, and efficiency, thereby removing stress and improving administrators' well-being (Coiffait and Leedham, 2016). The outcome of this study is also in agreement with the findings of other studies that used online coaching modalities in occupational health intervention (Gayed et al., 2019; Jiao et al., 2019; Myers et al., 2021; Okeke et al., 2021).

In a comparison study, Gayed et al. (2019) showed that both face-to-face and online intervention trials using the same programme content were effective in improving managers' confidence and reducing mental health conditions. The comparative study by Gayed and colleagues further showed improved perceptions of support and psychosocial climate among school administrators following a Zoom coaching model. Thus, the outcomes of the present study also strengthen prior findings by confirming that Z-GROW improved school administrators' subjective

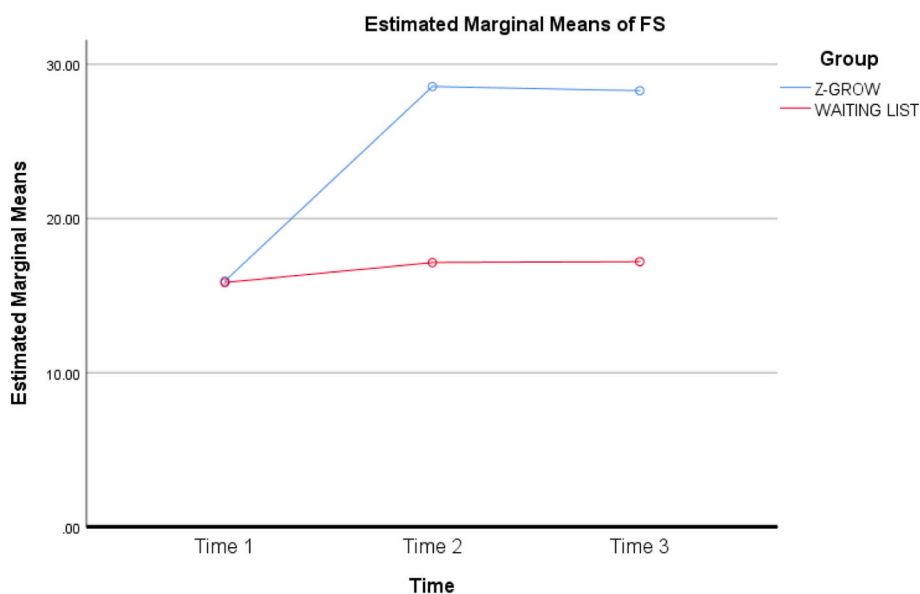


Fig. 7. Interaction Effect of Intervention and Time of Evaluation on Participants' scores on Flourishing scale. Time 1 = pretest; Time 2 = posttest; Time 3 = follow-up test; Z-GROW = Zoom delivered GROW model group.

well-being. This would validate the hypotheses on the positive effect of zoom coaching on healthy living and the occupational efficacy of school administrators.

Zoom is particularly valuable and has shown great benefit for occupational coaching, as it offers both video platforms that support therapeutic alliance (Simpson and Reid, 2014; Simpson et al., 2021). It also offers help to clients who are threatened by intimacy issues, especially those with avoidant traits who may want to avoid physical contact due to fears of stigmatization (Dunn and Wilson, 2021). Thus, this study has established that Zoom coaching is promising for effective mental health support in the era of COVID-19 (Liu et al., 2020; Zhong et al., 2020). It shows that the Z-GROW coaching model is effective in upskilling school administrators and improving their SWB.

Improved SWB of administrators is linked to a positive shift in the health and organizational outcomes (Bakker and Oerlemans, 2011; Bryson et al., 2017; Bashaireh and David, 2019; Kuykendall and Tay, 2015; Watson et al., 2018). This could lead to a sense of global well-being necessary to equip school leaders to cope with work-related demands and ultimately diminish mental health symptoms. Prior studies tend to suggest that such executive coaching and developing constructive thought patterns enhance SWB in school leaders (Grant et al., 2010).

5. Conclusion

Z-GROW has demonstrated efficacy in improving subjective well-being among school administrators. Clearly, the findings of the present study form the bases for the use of Z-GROW intervention for subjective well-being and other mental health conditions, providing school administrators with the opportunity to access occupational coaching from the comfort of their homes. Providers of primary healthcare and coaches are encouraged to validate the findings of this study. Occupational health coaches may also find using the Z-GROW model helpful for occupational health coaching. School psychologists working with school personnel may also consider the Z-GROW model.

6. Strengths of the study

This study addressed a contemporary issue among school administrators in the Nigerian context. Intervention for SWB among school administrators will improve health and professional outcomes. The use of randomized control trial design stands to authenticate the outcome of

the study regarding the efficacy of the Z-GROW model.

7. Limitations

The study did not analyze data on the participants' satisfaction with the Z-GROW intervention, which creates a gap for future studies. The use of a relatively small sample also limits the generalizability of the study outcomes, necessitating further broader studies that can validate the intervention in a broader context.

Data accessibility statement

Data for this study can be accessed from the corresponding author on reasonable demand.

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Declaration of competing interest

The authors declare that there is no conflict of interest regarding this study.

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- Cornelius O. Okorie^a, Francisca N. Ogba^b, Benjamin A. Amujiri^{c,*}, Felix M. Nwankwo^a, Theresa O. Oforika^d, Ntasiobi C.N. Igu^b, Christopher C. Arua^a, Basil N. Nwamuo^e, Charles N. Okolie^f, Esther O. Ogbu^f, Kingsley N. Okoro^f, Kingsley C. Solomon^f, Bright E. Nwamuo^g, Livinus O. Akudolu^f, Victor O. Ukaogo^h, Florence O. Orabuezeⁱ, Ikpechukwuka E. Ibenekwu^j, Casimir K.C. Ani^k, Harrison O. Iwuala^a
- ^a Department of Political Science, Alex Ekwueme Federal University, Ndufu Alike, Ikwo, Ebonyi State, Nigeria
- ^b Department Educational Foundations, Alex Ekwueme Federal University, Ndufu Alike, Ikwo, Ebonyi State, Nigeria
- ^c Department of Public Administration and Local Government, University of Nigeria, Nsukka, Nigeria
- ^d Department of Educational Foundations, University of Nigeria, Nsukka, Nigeria
- ^e Ebonyi State College of Education, Ebonyi State, Nigeria
- ^f Department of Philosophy/Religion, Alex Ekwueme Federal University, Ndufu Alike, Ikwo, Ebonyi State, Nigeria
- ^g Department of History and Strategic Studies, Alex Ekwueme Federal University, Ndufu Alike, Ikwo, Ebonyi State, Nigeria
- ^h Department of History and International Studies, University of Nigeria, Nsukka, Nigeria
- ⁱ Department of English and Literary Studies, University of Nigeria, Nsukka, Nigeria
- ^j Institute of African Studies, University of Nigeria, Nsukka, Nigeria
- ^k Strategic Contact Ethics and Publications, University of Nigeria, Nsukka, Nigeria
- * Corresponding author at: Department of Public Administration and Local Government, University of Nigeria, Nsukka, Nigeria. E-mail address: benjamin.amujiri@unn.edu.ng (B.A. Amujiri).